



Cornell University Announcements
Summer Session 1973

Cornell University Announcements

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Cornell University

Summer Session 1973

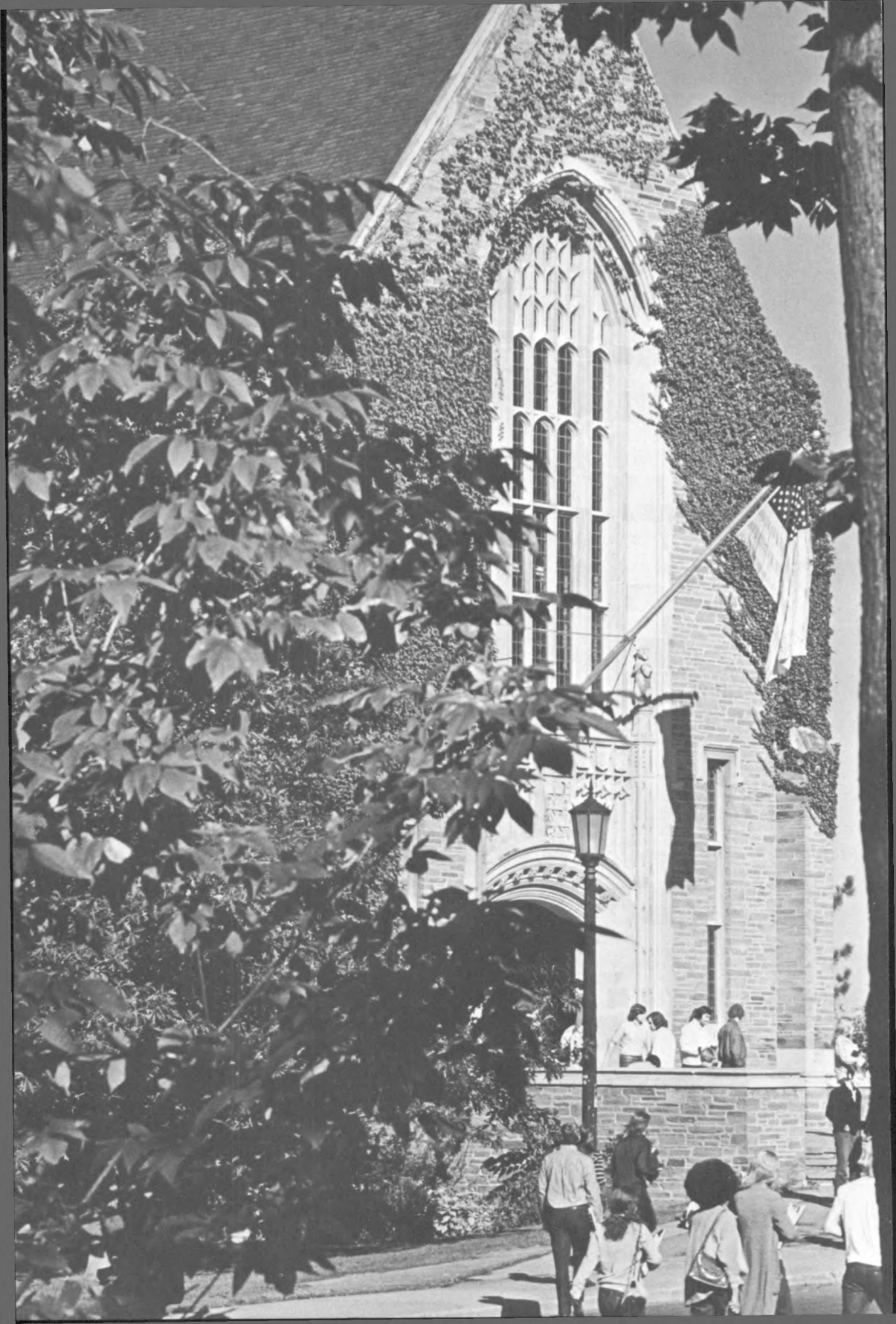
The Division of Summer Session office, 105 Day Hall, is open from 8:30 a.m. to 4:30 p.m. Monday through Friday. The telephone number of the office and of the dean, Martin W. Sampson, is 607/256-4987.

An application form for the summer sessions is at the back of this *Announcement*.



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Calendar of the Summer Sessions

1973

	Three-Week Session <i>June 6-26</i>	Eight-Week Session <i>June 18- Aug. 10</i>	Six-Week Session <i>June 27- Aug. 10</i>
ing Units Open	Tues., June 5	Sun., June 17	Tues., June 26
ummer Registration*	Wed., June 6 105 Day Hall	Mon., June 18 105 Day Hall	Wed., June 27 Barton Hall
asses Begin	Wed., June 6	Mon., June 18	Thurs., June 28
st day for withdrawing from the ssion without payment of a ction of tuition and fees	Fri., June 8	Wed., June 20	Fri., June 29
st day for payment of tuition d fees at the Bursar's office, fore 4:30 p.m.	Mon., June 11	Fri., June 22	Mon., July 2
st day for making any change registration without payment of fee. A \$10 change of registration e will be charged after this date	Wed., June 13	Fri., June 29	Mon., July 9
st day for making any change registration except for reasons yond control of the student	Mon., June 18	Fri., July 13	Wed., July 18
al Examinations Begin e schedule, p. 21.	Tues., June 26	Thurs., Aug. 9	Thurs., Aug. 9
ssion Ends	Tues., June 26	Fri., Aug. 10	Fri., Aug. 10
ing Units Close 2 p.m.	Wed., June 27	Sat., Aug. 11	Sat., Aug. 11

Wednesday, July 4th, is a University Holiday. No Classes Will Be Held.

Persons registering late without prior approval must pay a \$10 late registration fee. For further information concerning late registration, see p. 12.



Cornell University

Summer Session

Founded in 1865 by Ezra Cornell and Andrew D. White, Cornell University, youngest member of the Ivy League and an arm of the State University of New York, comprises sixteen fully accredited schools and colleges. Its curriculum encompasses most major segments of education. The years since it was founded have seen tremendous growth and many changes, yet the principles of diversity and intellectual freedom upon which the University was founded still exist today.

Cornell's campus, spreading over 740 acres, contains more than ninety major buildings which house classrooms, laboratories, libraries, and residence halls. Its potential for growth can easily be seen by the additional buildings now being constructed.

Cornell's more than 15,000 students are as diverse as the university they attend, coming from every state in the nation and about 90 foreign countries. Similarly, its outstanding faculty, numbering nearly 800, is drawn from many different locales.

While the student population is considerably smaller in the summer, it is still as diverse in origin. The Summer Session of 1972 brought over 4,300 students to the campus from forty-three states and over forty foreign countries. The 1973 Summer Session offers over three hundred credit courses and more than forty Special Programs for groups of varying sizes and interests. Unlike the academic year, the summer population ranges from the high school junior taking advanced placement courses to the business executive enrolled in a Special Program.

The course offerings in the regular summer sessions are available to college-bound secondary school seniors, undergraduate and graduate degree candidates, teachers, and other persons interested in personal or professional improvement. The summer schedule is planned in cooperation with the faculties of the various schools and colleges, with particular regard for courses that can be taught successfully in short term and in a summer environment. The same standards of instruction and academic performance are maintained as those of the academic year.

The city of Ithaca is one of character and charm, ringed by rolling hills and laced with deep gorges.

Situated at the southern end of Cayuga Lake, it serves as the county seat for Tompkins County, an essentially rural area. Education is a major industry in Ithaca with two well-known educational institutions facing each other across the valley—Cornell University on East Hill and Ithaca College on South Hill. Together they provide cultural and recreational opportunities that help make the city an interesting and stimulating place to live.

When summer comes to Ithaca the people come too, since this is a choice vacation spot in the famed Finger Lakes Region of west central New York State. Cayuga Lake, one of the largest of the Finger Lakes, attracts many water skiers and boat enthusiasts. Ithaca Falls, tumbling down Fall Creek Gorge, is a favorite spot of camera buffs. Golfers have a choice of four courses in the area, and for swimming, picnics, boating, and spectacular scenery, residents and visitors alike can go to the three state parks close by. Many picturesque restaurants dot the countryside and range from an old gabled country inn to one located in the former city railway station. Ithaca offers the unique combination of a cosmopolitan atmosphere in a rural setting.

Summer is for enjoyment as well as for study, and at the University there is a full schedule of concerts, lectures, plays, art exhibitions, films, and folk and square dancing. For the more energetic, there is an eighteen-hole golf course, tennis and squash courts, two indoor swimming pools, and gym facilities. The trails down the two deep gorges which cut through campus attract many walkers, as does Sapsucker woods, the 180-acre bird sanctuary northeast of the main campus. Summer at Cornell can be a most rewarding experience.

Admission

It is the policy of Cornell University to actively support the American ideal of equality of opportunity for all, and no student shall be denied admission or be otherwise discriminated against because of race, color, creed, religion, or national origin.

Admission of undergraduate or graduate students to the Summer Session establishes no priority with re-

spect to admission to the regular academic terms. Students seeking admission to Cornell undergraduate colleges should apply directly to the Office of Admissions, 247 Day Hall. Information on admission to the Graduate School can be found on p. 14.

Categories of Admission

Students are eligible for admission to the summer sessions in the following categories: undergraduates, graduates, and special students.

The undergraduate category includes persons who are candidates in good standing for a Bachelor's degree or precollege secondary school graduates who have been accepted for admission to an accredited college or university. No other secondary school students will be accepted except in certain Special Programs of the Summer Session, described on pp. 47-57.

The graduate category includes candidates for advanced degrees either at Cornell University or other colleges or universities.

Special students include teachers and members of the general public who are not candidates for academic degrees and who wish to take courses to meet certification requirements, for personal interest, or for professional improvement. Secondary school students who do not classify as "undergraduates" (see above) are not eligible for admission as special students. A student who has been suspended or dismissed from his college or university is not eligible for admission as a special student until at least one year after the date of his suspension or separation.

Auditors

A graduate or special student who wants to attend a course or courses but does not want credit may register for such courses as an auditor. Undergraduate students are not permitted to register for audit.

Auditing a course requires regular attendance in class and completion of all required work except that which is graded. The audited course will appear on the student's record unless he is a student in the Cornell University Graduate School; in this case, no record of the audited course will appear. Tuition and fees will be charged at the same rate as for credit.

Application

Regular Sessions

Admission to the three-week, six-week, and eight-week sessions is gained through formal application. The application form and instructions are included in the back of this *Announcement*. All parts of the form pertaining to the student who is applying must be filled out in full. Applications will be accepted up to and including registration day. Registration materials will be mailed to all persons who have filed a satisfactory application at least two weeks prior to registration day. Persons not receiving registration materials by mail will receive them at registration. Late applications are welcomed, but obviously the risk of finding course enrollment filled is greater.

Special Programs

Applicants for admission to the Special Programs of the Summer Session are *not* to use the form in the back of this catalog. Each Special Program has a separate application form which is obtained by request from the director of that program. For information on where to write to obtain application see Special Programs, pp. 47-57.

Academic Credit

Courses offered in the regular sessions are assigned appropriate hours of credit. The same is true in many of the Special Programs of the Summer Session. Students are not to register for any course work which normally cannot be completed by the end of the summer term.

In general a student may register for a maximum of four credit hours in the three-week session, eight credit hours in the six-week session, and ten credit hours in the eight-week session. Permission to register for more than the above number of credit hours will be granted only to students with high academic averages, upon the recommendation of their advisers, and the approval of the dean of the Summer Session. Cornell undergraduates will need approval of their college official (see listing on p. 47).

A candidate for a graduate degree in an institution other than Cornell, who is planning to apply his Summer Session credit toward his degree, does not register in the Graduate School, but only in the Division of Summer Session.

A special student wishing to register for more than the stated maximum number of credit hours must have his program approved by the dean of the Summer Session.

In this *Announcement* each credit course is marked immediately after the title in one of three ways.

(U): Courses marked (U) carry credit only at the undergraduate level.

(U,G): Courses marked (U,G) are offered both at the graduate and undergraduate levels. Graduate students who are candidates for advanced degrees or who want certification for work done at the graduate level must indicate at the time of registration their intention to complete the course at the graduate level and must be prepared to do any additional work that may be required. Students registered in "U,G" courses should consult with their instructors early in the session to see that the level is properly recorded. Accuracy of final grade reporting depends upon such action.

(G): Courses marked (G) are intended primarily for students who are candidates for advanced degrees for teachers, and for others who wish certification from accrediting agencies for work done at the graduate level. Undergraduates with adequate preparation may register for these courses only after receiving permission from the instructors in charge.

Transfer Credit

A graduate or undergraduate degree candidate from a college or university other than Cornell University

ould consult the appropriate official, either in the
 pllege to which he has been admitted, or where he is
 ow matriculated, for advice in planning his summer
 udy program. This is important in order to assure
 at the credit he earns will be accepted toward his
 egree program. Credit for courses earned through the
 ivision of Summer Session is comparable to credit
 or courses offered during the academic year
 Cornell.

Credit Toward Cornell Degrees

ornell graduate degree candidates may seek resi-
 dence credit toward degrees in the amount of two-
 thirds of a unit for a program of six or more credit
 hours in the Summer Session. Request for residence
 credit is made to the Graduate School and must be
 supported by the student's Special Committee. See
 pp. 13-14 for further information regarding the
 Graduate School.

Cornell undergraduate degree candidate, or a
 student accepted for fall admission as an under-
 graduate of Cornell University, will be admitted to a
 summer session only after the appropriate officer
 from the following list has approved and signed his
 application for admission.

College of Agriculture and Life Sciences

J. C. Burgett

College of Architecture, Art, and Planning

Dean C. Parsons, Associate Dean C. W. Pearman,
 Professors O. M. Ungers, J. P. Shaw, J. Seley

College of Arts and Sciences

Assistant Dean B. B. Hirshfeld

College of Engineering

Basic Studies: Professor M. S. Burton
 Chemical Engineering: Professor K. B. Bischoff
 Civil and Environmental Engineering: Professors W. R.
 Lynn, G. B. Lyon
 College Program: Professor G. P. Fisher
 Electrical Engineering: Professor J. L. Rosson
 Industrial Engineering: Professor B. W. Saunders
 Materials Science and Engineering: Professor H. H.
 Johnson, L. W. VanDuzer
 Mechanical and Aerospace Engineering: Professors
 J. L. Resler, A. R. George
 Applied and Engineering Physics: Professor P. L.
 Hartman

School of Hotel Administration

Dean R. A. Beck, Assistant Dean P. L. Gaurnier,
 J. M. Osborn

College of Human Ecology

H. McAllister

School of Industrial and Labor Relations

Assistant Dean D. P. Dietrich

Division of Unclassified Students

Professor M. W. Sampson

A- to A+ Very good to excellent: comprehensive
 knowledge and understanding of subject matter,
 marked perception and/or originality.

B- to B+ Good: moderately broad knowledge and
 understanding of subject matter, noticeable perception
 and/or originality.

C- to C+ Satisfactory: reasonable knowledge and
 understanding of subject matter; some perception
 and/or originality.

D- to D+ Minimal: bare minimum knowledge and
 understanding of subject matter; severely limited
 perception and/or originality; "failing" work.

F Unsatisfactory: unacceptably low level of knowl-
 edge and understanding of subject matter; no
 perception and/or originality.

There are two exceptions to the above:

1. Auditors will not receive grades: See p. 8.
2. S-U grading (satisfactory-unsatisfactory) may be
 used for students registered for research or other
 individual work, and in certain courses so designated
 by the instructors at the beginning of the summer
 term. In courses where optional grading (S-U) is
 permissible, the instructor will report the names of
 students who have been granted permission to be
 graded on this basis to the Division of Summer
 Session office before the end of the second week of
 classes. Cornell undergraduate students must also
 obtain the approval of their school or college official
 (see above).

S Satisfactory: C- and above.

U Unsatisfactory: D+, D, D- or failure.

Grade slips will be mailed to the home address of all
 Summer Session students as soon after August 30
 as they are received. Copies of the grade slips will
 automatically be sent to the school or college offices
 of Cornell undergraduate and graduate degree
 candidates. *Grades will not be given over the
 telephone under any circumstances.*

Incompletes

If a student is prevented, for medical or other reasons
 acceptable to the instructor, from completing the
 work in any course before the last day of the session,
 he may request the instructor to report his grade as
 INC (incomplete). It is the student's responsibility
 to make specific arrangements with his instructor to
 complete the course work and have the grade
 reported to the Division of Summer Session office. If
 the course is completed within the time allowed it will
 appear twice on the record in the Office of the
 Registrar, with both the incomplete and the final mark
 being recorded. Satisfactory completion of the
 course does not eliminate the original "incomplete"
 designation.

Transcripts

Students needing transcripts of their Division of
 Summer Session record should request them from the
 Office of the Registrar, 240 Day Hall. With each order
 there is a charge of \$2 for the first transcript and \$1
 for each copy thereafter.

Grades

All courses are reported on the basis of letter grades:
 A+ through D- and F (failure). A description of
 various performance levels follows:

Registration

Applications will be accepted up to and including registration day. Registration materials will be mailed to all persons who have filed a satisfactory application at least two weeks prior to registration day (see below). Persons not receiving registration materials by mail will receive them at registration. The registration material will consist of the following:

(1) A set of registration coupons (blue designates undergraduate students; white, graduates and special students). The coupon marked "Admission Certificate" will contain the hour the student is to appear to register at the time and place specified below. Each student should complete the registration coupons and bring them with him (intact) when he appears to register. The coupons should not be torn apart.

(2) A brochure containing information about available living accommodations and an application for reservation of residence hall space. If the student wishes to stay in a residence hall, the application should be filled out immediately and mailed to the Department of Student Housing, 223 Day Hall, with an advance payment of \$25 which is applied toward the residence charge. Checks should be made payable to Cornell University. For more detailed information see pp. 14-16.

(3) A letter from the Safety Division explaining automobile regulations and a Traffic Bureau IBM card to be completed at registration time. Each student should read the letter carefully and bring both it and the IBM card with him to registration. The Traffic Bureau IBM card must be completed by the student, whether he will have a car on campus or not, and handed in at registration. For further information, see p. 17.

Registration will take place as follows:

Three-week session

Wednesday, June 6, 8:30-11:30 a.m. and 2-4:30 p.m.
105 Day Hall

Eight-week session

Monday, June 18, 2-4:30 p.m. 105 Day Hall

Six-week session

Wednesday, June 27, 8:30-11:30 a.m. and 1-3:30 p.m.
Barton Hall

Students who plan to take a course in more than one of the regular three-, six-, or eight-week sessions, should register for all such courses on the registration day for the first session which they are attending. (For example, a student who is planning to take a course in the three-week session and a course in the six-week session should register for both courses on Wednesday, June 6.) If a student has registered for a course in one of the regular sessions and then later decides to add a course in another session, the addition of that course in a later session will constitute a change of registration, not a double registration.

Registration in Unit Courses

Unit courses are indicated by a u immediately following the course number, and are less than full length in the six-week or eight-week session.

Unit courses in the regular sessions are usually three or four weeks in length. Their dates are given in the course descriptions. Students registering for a unit course beginning on the first day of one of the regular sessions will register on the regular registration day for that session at the time indicated on their registration coupons. Students registering only for a unit course beginning after the first day of one of the regular sessions will register at the Division of Summer Session office, 105 Day Hall, on the first day of the unit course at a time of day that does not interfere with their attendance in class.

Registration in Special Programs

Students registering for courses in the Special Programs of the Division of Summer Session will usually register at the first class meeting of the course at the time and place indicated on their registration material. Registration in Special Programs is entirely separate from registration in the regular sessions.

Tuition and Fees

Tuition and fees are due and payable at the Bursar's office, 260 Day Hall, on registration day, which for the three-week session is June 6, for the eight-week session is June 18, and for the six-week session is June 27.

The final date for payment without penalty is Monday, June 11, for the three-week session, Friday, June 27, for the eight-week session, and Monday, July 2, for the six-week session. A penalty of \$10 is charged if payment is made after these dates. The Bursar's office closes at 4:30 p.m.

The amount, time, and manner of payment of tuition, fees, or other charges may be changed at any time without notice.

Tuition

The rate of tuition is \$80 per credit hour. Tuition is charged according to the number of credit hours which the student is registered. Students registered in one or more of the regular sessions who take a course in a Special Program will complete two separate registrations. They will pay \$80 per credit hour for the course in one of the regular sessions and they will pay the Special Program rate for courses elected in that program.

Fees

General Fee. In addition to tuition, a fee of \$5 per week must be paid by all students. The General Fee covers University medical services, membership in University Unions including use of facilities at Willa Straight Hall and the new North Campus Union, use of library and athletic facilities, and participation in certain of the summer sessions events.



Course Fees. An asterisk (*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the course description. Course fees are *nonrefundable* and will not be prorated if a student cancels a course or withdraws from a summer session.

Late Registration Fee. Persons who fail to appear to register on registration day (see p. 10) will be charged a late registration fee of \$10 unless the fee is to be waived by prior approval of the dean of the Division of Summer Session. If a student knows that circumstances beyond his control will prevent him from registering at the specified time, he should write to the dean of the Division of Summer Session explaining the circumstance, and request permission to register late without payment of the late fee. If permission is granted, a letter to that effect will be sent to the student who must present the letter when he does appear to register. This same ruling applies for any student appearing to register for a Special Program after the registration date for that program has passed.

Change of Registration. Changes in registration made after the dates listed on p. 5 will be approved only upon payment of a \$10 change of registration fee. Change of registration includes cancellation of a course, change from one course to another, change from undergraduate to graduate level credit or vice versa, addition of a course to a program, change in credit hours, or change from credit to auditor status or vice versa. No change of registration is official unless made by appearing in person at the Division of Summer Session office, 105 Day Hall. Except for reasons beyond the control of the student, no change in registration will be permitted after the dates listed on p. 5.

Where change of registration involves cancelling a course without adding another course, the tuition for the course cancelled will be charged at the rate of 25 percent per week, or fraction of a week, from registration day to the effective date of the change of registration in both the six- and eight-week sessions. Changing in the three-week session will be charged at the rate of 33 1/3 percent per week or fraction thereof. Failure to attend a course without official cancellation will result in a grade of F for that course on the student's record.

Graduate Registration Fee. Applicants accepted for admission to the Graduate School as well as to a regular summer session who have not matriculated previously at Cornell must pay a fee of \$50 to the Graduate School in addition to the tuition required by the Division of Summer Session. The Graduate School fee is used to pay the matriculation costs. The fee is nonrefundable.

For other information concerning Graduate School regulations, see pp. 13-14.

Other Fees and Regulations Concerning Payments

Late Payments

Any student registered in a summer session who fails

to pay his tuition, fees, and other charges at the Bursar's office within the time prescribed by the University will be dismissed from the University. A student who is dismissed is not relieved from the payment of charges.

When, in his judgment, the circumstances in a particular case so warrant, the Bursar may allow an extension of time to complete payment. The student must make application for an extension in person at the Bursar's office prior to the last date for the payment of charges. For such an extension the student will be assessed a fee of \$5.

Cashing Checks

The Bursar of the University accepts checks drawn on banks in the United States in settlement of charges payable at his office, but a rule of the Board of Trustees forbids him to cash any credit instrument even to the extent of accepting a check or draft in amount greater than the sum due and returning the excess in cash. Students therefore are advised to open an account in an Ithaca bank as soon as they arrive in town, or else provide themselves with travelers' checks, drafts on New York City banks, money orders, or other forms of credit instrument which a bank will cash in the ordinary course of business.

Checks for amounts of \$25 or less may be cashed at the main desk in the lobby of Willard Straight Hall upon presentation of the Student's Official Registration Certificate.

Withdrawal from a Summer Session

A student may apply for withdrawal from a summer session at any time by appearing in person at the Division of Summer Session office. Approval of withdrawal requires the surrender of the Student's Official Registration Certificate and all privileges provided from the date withdrawal is granted. A grade of F (failure) will automatically be recorded for all courses in which a student is enrolled if he withdraws without officially notifying the Division of Summer Session office, and the full amount of tuition and fees will be due and payable.

Withdrawal from the Three-Week Session

Any student who withdraws from the three-week session will be charged tuition and the General Fee at the rate of 33 1/3 percent per week, or fraction of a week, from the registration day to the effective date of withdrawal. Students who withdraw may, upon proper application, receive a refund of tuition and the General Fee in accordance with the following schedule. (Refunds will not be made for course fees.)

Withdrawal Dates	Percent Refund
June 6-12	66 2/3
June 13-19	33 1/3
June 20 and after	0%

Withdrawal from the Six-Week Session

Any student who withdraws from the six-week session will be charged tuition and the General Fee at the rate of 25 percent per week, or fraction of a week, from the registration day to the effective date of withdrawal. No tuition or General Fee will be charged in the six-week session if withdrawal is made by Friday, June 29. Students who withdraw after June 29 may, upon proper application, receive a refund of tuition and the General fee in accordance with the following schedule. (Refunds will not be made for course fees).

<i>Withdrawal Dates</i>	<i>Percent Refunded</i>
June 30–July 3	75%
July 4–10	50%
July 11–17	25%
July 18 and after	0%

Withdrawal from the Eight-Week Session

Any student who withdraws from the eight-week session will be charged tuition and the General Fee at the rate of 25 percent per week, or fraction of a week, from the registration day to the effective date of withdrawal. No tuition or General Fee will be charged in the eight-week session if withdrawal is made by Wednesday, June 20. Students who withdraw after June 20 may, upon proper application, receive a refund of tuition and the General Fee in accordance with the following schedule. (Refunds will not be made for course fees).

<i>Withdrawal Dates</i>	<i>Percent Refunded</i>
June 21–23	75%
June 25–30	50%
July 2–7	25%
July 9 and after	0%

Withdrawal from Special Programs

A student wishing to withdraw from a Special Program of six weeks' duration held during the same period as the six-week summer session (June 27 to August 10) will be governed by the same method of prorating tuition and the General Fee as stated above. A student who wishes to withdraw from a Special Program that does not fall into the above category, should check with the Bursar's office in Day Hall for information concerning any refund of tuition and fees after he has notified the Division of Summer Session office of his intention to withdraw.

Financial Aid

There are no general University scholarships available for summer sessions study.

Students registered in a summer session are normally not eligible for University financial aid. In special cases, however, when the applicant is a regular full-time student at Cornell and his summer program has the full approval of his faculty adviser, he will be considered for loan assistance. More specific information can be obtained from the Office of Scholarships and Financial Aid, Room 203, Day Hall.

Opportunities for part-time employment during the summer are so limited that students should not rely on this means of financing any part of their Summer Session expenses. An application for part-time summer employment can be obtained by contacting the Student Employment Office, Room 203, Day Hall.

The Graduate School

The Graduate School is an administrative unit entirely separate from the administration of the Division of Summer Session. *Only candidates for advanced degrees at Cornell University are registered with the Graduate School in the summertime.* Students who take course work at the graduate level in the Summer Session but who are not candidates for advanced degrees at Cornell University have no connection with the Graduate School.

Credit for Advanced Degrees

Summer Session credit may be used for partial fulfillment of residence requirements for the following advanced degrees, under regulations of the faculty of the Graduate School, and with prior approval of the candidate's Special Committee: Master of Arts (M.A.); Master of Science (M.S.); Master of Science for Teachers (M.S.T.); Master of Arts in Teaching (M.A.T.); Master of Fine Arts (M.F.A.) [only in English]; Master of Industrial and Labor Relations (M.I.L.R.); Doctor of Education (Ed.D.); and Doctor of Philosophy (Ph.D.).

When the candidate has registered in both the Division of Summer Session and the Graduate School, a minimum of six hours in the six-week session will count as two-fifths of a residence unit if approved in advance and reported as acceptable by the student's Special Committee.

Requirements for Master's degrees may, upon approval of the General Committee of the Graduate School, be completed solely during the summer period if instruction in the chosen major and minor subject is offered. Only two residence units for study in the Summer Session may be accepted in fulfillment of requirements for the doctorate. Upon recommendation by the Special Committee of a student and on approval by the dean of the Graduate School, residence may be transferred for study in one preceding Cornell summer term if such study is attested to be an integral part of the graduate program subsequently undertaken.

Candidates for advanced degrees who expect to complete requirements and to take their final examinations upon completion of their summer course work should call at the office of the Graduate School, at least three weeks prior to the end of their course, for the necessary instructions and forms.

Admission

Students intending to become candidates for advanced degrees at Cornell should write to the Dean of the Graduate School, Sage Graduate Center. If the *Announcement of the Graduate School* is also wanted, a zip code must be included with the applicant's address. Applications for admission to the Graduate School received prior to May 1 will be acted upon in time for the accepted candidates to register with the Graduate School and the Division of Summer Session on registration day. The Admissions Committee cannot give assurance that an application received after May 1 will receive the same consideration that it would receive if filed before that date.

Registration Through the Division of Summer Session Office

Students must register with the Division of Summer Session office only if academic course credit is desired. Only graduate students who have been approved for admission in the Graduate School and desire course credit must register with both the Division of Summer Session office and the Graduate School.

Registration Only Through the Graduate School

Full information and proper forms for registering with the Graduate School during the summer may be obtained from the Graduate School. The registration must be completed within *one week* of registration day. To register, each candidate must file a statement-of-courses form properly approved by his Special Committee. Each *new* candidate must also file a nomination-of-committee form.

Such registration is regarded in the same fashion as registration for a regular semester and affects the deadlines for fulfillment of requirements.

Candidates registered in the Summer Session who were not registered in the preceding spring term, but who expect to continue as full-time graduate students in a succeeding fall or spring term, must arrange with the dean of the Graduate School for permission to register in the regular term.

Registration Fee. On admission to the Graduate School, the applicant is required to pay the sum of \$50 within twenty days of notification of admission, unless he has matriculated previously at Cornell (see p. 12).

Summer Research. A candidate for an advanced degree who has been in residence at Cornell during one regular semester may, on recommendation of his Special Committee and with the approval of the dean at least one week in advance, be permitted to register for an eight-week period of Summer Research under the personal direction of a member of the graduate faculty.

Residence Credit. For those students eligible for and desiring residence credit, a prorated tuition is charged in accordance with the fraction of a residence unit

to be earned, based on the tuition in effect for the subsequent academic term.

Noncredit Graduate Registration. To encourage students to continue their studies during the summer period, no tuition is charged for a noncredit graduate registration if the student has been registered during the previous academic year. The student has access to the regular services of the University clinic and infirmary during the summer without charge if he has been registered as a full-time student during one term of the previous academic year and is registered for Summer Research on a noncredit basis. Registration for Summer Research, whether for residence credit or noncredit, is done in the Graduate School office.

Counseling and Advising Services

Ombudsman

The Cornell University Ombudsman hears and investigates any complaint brought by any member of the University community concerning any aspect of the operation of the University. When appropriate, the Ombudsman directs a complainant to the office which can deal with his problem.

The Ombudsman's office, located at 201 Barnes Hall, will be open during the summer. Hours are 9 a.m. to 12 noon, Monday through Friday.

Office of the Dean of Students

The Office of the Dean of Students, 103 Barnes Hall, has a trained staff available for conferences with students concerning on-campus and off-campus housing; student activities and organizations; selective service information; and any other matter of personal, educational, and social concern to individual students and student groups.

International Student Office

The International Student Office, 200 Barnes Hall, maintains a staff prepared to assist all students from other countries who may need information about living quarters, immigration matters, personal and social problems, or other questions.

Housing

University Residence Halls

Accommodations are available in University-operated housing units for graduate and undergraduate men and women registered in the Summer Session. More detailed information on housing will be mailed by the office of the Division of Summer Session after admission has been approved. Rooms are furnished with desk, desk chair, desk lamp, bookcase, chest of drawers, bed linens, blankets, and bedspread. Bed linens are laundered by the University and exchanged weekly. Daily room care, including bed making, is the responsibility of the occupant.



Students registered in any program of the Division of Summer Session who withdraw before the program is completed must terminate their occupancy of University-operated housing facilities, and they must officially notify the Division of Summer Session office of their intent to withdraw.

Students may make application for single or double rooms in University residence halls if they desire. The rates for the three-week session are \$66 for single occupancy and \$48 for double occupancy. For the eight-week session, the rates are \$160 for single and \$108 for double occupancy. For the six-week session the rates are \$120 for single and \$82 for double accommodations. For periods of less than three weeks the rates are \$22 for single and \$16 for double occupancy per person per week or part of a week. All rates cover cost of room only.

There is a head resident in each hall who, in cooperation with the staff of the Office of the Dean of Students, is concerned with the general welfare of the students.

Meals are available at various University dining units located conveniently throughout the campus.

Opening and Closing Dates

Living units to be used during the three-week session will open for occupancy on Tuesday, June 5, and they will close on Wednesday, June 27. Those to be used during the eight-week session will open on Sunday, June 17, and close on Saturday, August 11. Those for the six-week session will open Tuesday, June 26, and close Saturday, August 11. All living units will close at 2 p.m. on the last day of occupancy. Earlier or later occupancy will not be possible because of other commitments for use of the residence halls.

Application for Rooms

Room application forms are distributed by the Division of Summer Session office but only after admission to a summer session or program has been approved. Each student in a regular session will receive a room application form along with his registration coupons.

A deposit of \$25 is required with each application for residence. A check or money order for that amount, payable to Cornell University, Department of Student Housing, must be enclosed with the room application. No room request will be considered until the application form and the deposit are received. The deposit is applied to the room charges, except for \$5 which will be held for a key deposit.

The deadlines for an applicant to file withdrawal of his room application, in writing, with the Department of Student Housing are as follows:

Three-week session *before* May 26

Eight-week session *before* June 8

Six-week session *before* June 15

The deposit will be forfeited on cancellations received on or after the above dates.

Room Assignments

Students who have submitted room applications and \$25 deposits to the Department of Student Housing Assignment Office, will receive letters acknowledging the deposits and containing room assignment instructions and copies of the residence halls contracts.

Requests for single or double rooms will be considered. However, because all rooms are assigned at the time of arrival on a first-come, first-served basis, students are urged to arrive at their residence halls between the hours of 8 a.m. and 4 p.m. on the day before registration in their session.

Off-Campus Housing

Students interested in off-campus accommodations may use the listing of available apartments and rooms posted in the Student Housing Assignment Office, 223 Day Hall. This office is open from 8 a.m. to 4 p.m. Monday through Friday.

Married Student Housing

Cornell University maintains three apartment complexes for married students and their families: Cornell Quarters, Pleasant Grove Apartments, and Hasbrouck Apartments. Located within a mile of the campus, the units are composed of one- and two-bedroom apartments.

Information concerning married student accommodations may be obtained from the Married Student Housing Office, Hasbrouck Apartments, Pleasant Grove Road, Ithaca, New York 14850.

Dining Services

Dining facilities available for the Division of Summer Session students will be located in Willard Straight Hall, Statler Hall, Stocking Hall, and North Campus Union. A special program, Summer Co-op Dining, features three "all you can eat" meals a day at Willard Straight Hall and at North Campus Union. Willard Straight Hall will have cafeteria service for customers in addition to co-op dining. North Campus Union, will be organized basically for Summer Co-op Dining, but will also permit the purchase of individual meals at higher rates. The dairy bar in Stocking Hall will be open weekdays for breakfast and lunch and the student cafeteria in Statler Hall will provide weekday luncheon service. Further information concerning the co-op programs will be provided with an application for membership by writing to Summer Co-op Dining, 217 Day Hall, Cornell University, Ithaca, New York 14850.

Health Services

The University student medical services are available to all students officially registered in the Summer Session. Students registered in the regular six-week or eight-week sessions are entitled to (1) unlimited visits to the Gannett Medical Clinic, 10 Central Avenue; (2) emergency surgical care, defined as in-

urgical procedures which are necessary for the immediate welfare and safety of the patient; and (3) hospitalization at Tompkins County Hospital with medical care for two days for students registered in the six-week session and six days for students registered in the eight-week session.

Additionally, medical care will be rendered to adult dependents (over fifteen years of age) of summer students, on a fee-for-service basis.

Students registered in Special Programs are also entitled to (1) unlimited visits to the Clinic for the period of registration; (2) hospitalization with medical care based upon length of registration—none if three weeks or less, and, if more than three weeks, graduated up to fourteen days, the maximum based on the entire summer of approximately three months; and (3) emergency surgical care as defined above if the student is registered for more than three weeks.

Students registered in only the three-week session will be eligible only for unlimited visits to the Gannett Medical Clinic. They will be responsible for their own emergency surgical care and medical and hospital care fees.

If a student elects to consult a private physician, the cost of this service is not covered by the health fee.

Students who withdraw from the Summer Session terminate health services as of the withdrawal date.

Clinic Hours

Monday through Friday: 9 a.m.–5 p.m.

Saturday: 9 a.m.–12 noon

Sunday: 10–11 a.m.

Physicians are on duty at the above hours except between 12 noon and 2 p.m. weekdays. Nurses are in attendance at all times during clinic hours.

Should illness or injury occur when the clinic is not open, students should call 272–6962 for instruction. All accidents should be reported to the Safety Division, 256–5211.

Emergency Service

A doctor is always available for calls of an emergency nature when an accident has occurred or when the student is too ill to come to the clinic or the hospital. (In residence halls these calls should be made by the head resident whenever possible.) Telephone calls for this service should be made through the Gannett Medical Clinic, 256–5155, when the clinic is open (see hours above); after clinic hours call 272–6962. This service is not designed to care for students in their rooms. A charge of \$5 in the daytime and \$10 at night is made for such calls.

Special Regulations

Student Conduct

The Summer Session is administered under the same general regulations governing student conduct which apply to all other sessions of the University,

with slight modifications to cover the special circumstances of the Summer Session. Students are expected to familiarize themselves with the contents of the Campus Code of Conduct and the Code of Academic Integrity. The regulations and codes are available at summer sessions registration desks and from the Office of the Dean of Students, 103 Barnes Hall.

The regulations and codes, products of extensive deliberations involving students, faculty, and administration, are statements of standards and regulations necessary to ensure maximum individual freedom and the effective functioning of the University as an educational institution.

In addition, students living in University residences are responsible for familiarizing themselves with the specific rules applying to their places of residence. They may obtain copies of the rules from head residents and resident advisers.

The responsibility for administration of faculty and University Senate policy with respect to student discipline is exercised by the Office of the Judicial Administrator.

Automobile Regulations

Because of the limited number of on-campus parking spaces, the University does not encourage the use of automobiles, but does recognize that in certain cases there may be important reasons why an automobile is needed. Any person registered in a program of the Summer Session who operates or parks, or whose vehicle is operated or parked, at any time on the grounds of the University must register the vehicle with the Traffic Bureau at the time of Summer Session registration, or within five days of acquiring a vehicle subject to the registration requirements. Registration and parking permits must be affixed and displayed as directed within forty-eight hours of issuance. The applicant and the vehicle(s) being registered must meet all requirements prescribed by New York State for legal operation.

Motorcycles and motor scooters are considered as motor vehicles, must be registered, and are subject to all rules and regulations governing motor vehicles. Trailers, as family units, are not allowed on any University property. Parking on campus from 8 a.m. to 5 p.m. Monday through Friday and from 8 a.m. to 1 p.m. on Saturday, except in certain metered parking areas (Sage Lot, Helen Newman Lot) is by permit only. Parking restrictions are in effect twelve months of the year.

Each student registered for any program during the Summer Session is required to complete the Traffic Bureau IBM card at the time of registration *whether or not he has a vehicle*. This card is kept on file by the Traffic Bureau and Safety Division.

The student's registration in the University is held to constitute an agreement on his part that he will abide by its rules and regulations with regard to traffic and parking or be subject to the prescribed penalties.

University Libraries

The libraries on the Cornell campus are many and varied. They contain nearly four million books and provide up-to-date facilities for research and study in countless fields.

The central library, at the south end of the Arts Quadrangle, is composed of two parts. Uris Library, the building with the tower that has become the symbol of Cornell, is essentially an undergraduate library for students in the liberal arts. A principal aim of this library is to bring readers and books as close together as possible. Bookstacks are open to all, and only reserve books in heavy demand are held in a special category. There are listening rooms where students, singly or in groups, may hear recordings of the spoken word, and there is a lecture room with sound and projection capabilities.

Across the walk from Uris is the John M. Olin Library, devoted more specifically to graduate and faculty research. This closed-stack library houses many special collections of books and manuscripts, among them Rare Books, a collection on East and Southeast Asia, and another on the history of science, the archives of the University, maps, and newspapers.

The two libraries, Uris and Olin, complement each other in support of the University's program of teaching and scholarship. Besides this central facility, there is an extensive system of college, school, and department libraries. Chief among these are the Albert R. Mann Library serving the Colleges of Agriculture and Life Sciences, and Human Ecology; the Fine Arts Library serving the College of Architecture, Art, and Planning; the libraries of the College of Engineering and the New York State Veterinary College; and the libraries serving the Graduate School of Business and Public Administration, the Law School, the School of Hotel Administration, and the New York State School of Industrial and Labor Relations.

The privilege of borrowing books for home use is granted to all students who comply with library regulations. Presentation of the Student's Official Registration Certificate is required when borrowing books. Stack permits for the Olin and Mann libraries are issued to graduate students. Many of the libraries have carrels in their stacks which are available for assignment to graduate students upon application.

Most of the libraries have special copying services, and some publish handbooks and bibliographies that are distributed without charge. A schedule of the hours for all libraries on campus will be available at summer sessions registration desks and in the *Weekly Bulletin*.

The Weekly Bulletin and Calendar

The *Weekly Bulletin* is the only campus-wide source of information about events of interest for faculty and students published weekly during the summer.

It contains a calendar of the week's events, official notices, news items, features, and a listing of available services.

The first issue of the *Weekly Bulletin* will be distributed at registration on June 27 in Barton Hall, and thereafter will be distributed on campus during each of the five succeeding weeks of the six-week session. Copies will be available without charge to anyone at the following places: Division of Summer Session office, 105 Day Hall; main desk, Willard Straight Hall; Visitor Information Center, Day Hall; main desk, Statler lobby; Dairy Bar; University dormitories; main desk, North Campus Union; and at Mayer's Smoke Shop, State Street.

Extracurricular Activities

The Division of Summer Session, with the cooperation of various departments and agencies of the University, presents a program of public events and recreation designed to enrich the campus experience of its summer visitors. The Summer Arts Festival is again being presented in addition to the regular program of planned activities. For more information about the Summer Arts Festival, see pp. 59-61.

University Unions

There are three University Unions at Cornell: Willard Straight Hall, which has served student needs since 1925; the Agnes and Jansen Noyes Center, which opened in the fall of 1967; and the North Campus Union, which opened in 1971.

Willard Straight Hall serves as a campus gathering point and a center for social, cultural, recreational, and educational activities for all Cornell students. It has facilities for dances, receptions, and other social gatherings; a theatre; a billiard and game room; a browsing library; lounges; a music room; a room for the exhibition of works of art; a craft shop with lessons in ceramics; a barber shop; and offices and meeting rooms for student organizations. Among the many special services available for students are a central ticket office, a painting and phonograph record rental service, and a central reservations service for student activities. The Straight desk is a service center where newspapers, magazines, and sundries are sold. Checks up to \$25 may be cashed there. The desk is manned seventeen hours a day and offers an information service with a long tradition of finding the answer to any question about Cornell. Dining services include a cafeteria, a snack bar (the Ivy Room), a luncheon buffet (the Elmhirst Room), and rooms for private luncheons and dinners.

Noyes Center is located in the west campus residence area on Stewart Avenue. It provides numerous facilities and activities for members of the Cornell community, including a cafeteria, study lounges, meeting and seminar rooms, a music listening room, a game room with table tennis and billiards, a television lounge, a pub, an information and service desk selling sundries, newspapers, and magazines, and a mini-pick-up (grocery store).

The North Campus Union is in the new residence hall complex located between Pleasant Grove Road and Triphammer Road. Facilities include a mail center; a pick-up area for laundry, dry cleaning, a

hoe repair; a store that sells toilet articles, school supplies, gift items, cards, records, etc.; a craft shop featuring lessons in weaving, jewelry, metal craft, leather, macrame, tie-dyeing, printing, etc.; photographic darkrooms; television lounges; a recreation area with billiards and table tennis; a music listening room; browsing lounges; a multipurpose room; meeting rooms and offices for student organizations; music practice rooms; a nursery school; and a cafeteria, private dining rooms and a tavern.

Special staff resources for students include coordinators for cinema, concerts, reservations, black activities, graduate activities, and international activities.

The programs and activities available to students for extracurricular recreation and learning through University Unions are of primary importance. They are planned by students, faculty, and staff who are members of the Board of Governors of University Unions, the Program Board, the three Union boards, and the numerous committees and clubs which comprise University Unions, including Cornell Cinema and the Cornell Concert Commission.

General responsibility for determining policies and operating procedures for all three Unions is in the hands of students through these boards. These services and activities support the educational objectives of the University and provide opportunities for more meaningful personal relationships among members of the Cornell community, and fulfill the request of Willard Straight, who wanted to "...make Cornell a more human place."

Membership in University Unions is covered by the General Fee paid by all Division of Summer Session students, and the right is reserved to request appropriate identification from persons who use Union facilities. The *University Unions Summer Program Brochure*, available in any of the three Union buildings, contains more detailed information on films, lectures, trips, nature walks, and other summer activities.

Social and Cultural Activities

For those with interests in particular fields, there are more than a hundred organized groups, which include both faculty and students in their membership. Among them are clubs for persons with similar academic interests or similar hobbies, local chapters of professional organizations, and a number of national honorary societies that recognize achievement in scholarship and other fields of endeavor.

Religious Services

Interdenominational services (ecumenical insofar as possible) are held in Sage Chapel during the summer of 1971 at 11 a.m. on six Sundays, July 1–August 5, inclusive. Cornell chaplains and staff supply the pulpit, and the Summer Session Choir is featured each week. The Choir has open membership, and the music is under the direction of the Department of Music. Arrangements for the summer services are the responsibility of the Office for Coordination of University

Religious Affairs, Anabel Taylor Hall. Information about other religious services on campus and in Ithaca may be obtained in the *Weekly Bulletin* or by calling 256-4214.

Coordinated Religious Programs

"Freedom for all; domination by none" is the guiding principle under which religious and interreligious affairs have flourished at Cornell since 1869. Organizational structures have altered through the years to keep pace with changing times, the growing complexity of the University, and the need to meet the challenge of succeeding generations in their search for significant and meaningful life. In 1971 new structures emerged replacing the Cornell United Religious Work (CURW), which came into being in 1929. Three new organizations, all housed in Anabel Taylor Hall, are now operational: The Office for Coordination of University Religious Affairs (OCURA); the Centre for Religion, Ethics, and Social Policy; and the Council of Federated Ministries.

Among the functions of the Office for Coordination of University Religious Affairs (OCURA) are (1) the administration and scheduling of Anabel Taylor Hall for religious and other campus groups; (2) providing an information and referral service concerning religious counselors, programs, projects, and worship services (telephone: 256-4214); (3) serving as liaison between the Centre for Religion, Ethics, and Social Policy; the Council of Federated Ministries; and the divisions and departments of the University; and (4) in general, facilitating, coordinating, and interpreting religious affairs at Cornell in cooperation with the University Senate's Subcommittee on Religious Affairs and under the Vice President for Campus Affairs.

The Centre for Religion, Ethics, and Social Policy is an independent educational institution, incorporated under the New York State Education Law and affiliated with Cornell University by formal agreement. It is established to provide continuing opportunities for Cornell students and faculty and other interested persons to deal with questions of public policy as problems of religious belief and moral decision. The Centre operates on the assumption that there are profound religious and ethical issues involved in social policy conflict. It functions to provide the occasions and resources wherein such conflicts can be investigated and critically assessed from religious and ethical perspectives. The Centre expresses its concern through lectures, conferences, seminars, research studies, action projects, and publications.

The Centre is especially concerned with providing opportunities and support for students in initiating and participating in programs of their own design. It encourages the active participation of chaplains and their ministries in its work.

Currently the Centre is sponsoring programs in the following areas: art and religion; alternate communities and life styles; video community education; alternate professions; adversarial research; sex, marriage, and the family; and politics and religion.

The Centre operates programs in The Commons, a coffeehouse in Anabel Taylor Hall. These include dra-

matic productions, poetry readings, video programs, films, and art displays.

The Council of Federated Ministries is organized for the purpose of extending and coordinating the interests and concerns of the religious ministries at Cornell University. At present seventeen denominations and other religious bodies are represented in the Council. While each University ministry is autonomous, developing programs according to the aims, goals, and religious and moral persuasions of its constituents, the Council provides ongoing opportunity for joint programming and interreligious cooperation.

In addition to their leadership in worship, projects, and noncredit course offerings, fifteen full-time and part-time chaplains, as well as several faculty advisers, provide special counseling services to the Cornell community.

Information concerning summer activities of the various ministries may be secured at Anabel Taylor Hall. Also, many of the chaplains are available for counseling during the summer.

Summer Session Choir

Music for the Sage Chapel services is provided by the Summer Session Choir under the direction of Professor Donald R. M. Paterson, University Organist. The Choir rehearses in Sage Chapel on Tuesday evenings at 7:30 p.m. and on Sunday mornings at 9:30 a.m. The first rehearsal will be held on Sunday, July 1. All students and interested persons are invited to participate.

Concerts

The 1973 Summer Session Concert Series, a program of evening concerts by distinguished artists, is presented as part of the Summer Arts Festival. For further information, including a listing of the concerts, see p. 60.

Public Lectures

A wide variety of lectures is available to all students enrolled in the Summer Session as well as to members of the University community at large. The Division of Summer Session itself sponsors a series of weekly lectures on topics of general interest. The student union, Willard Straight Hall, also sponsors a general interest series as does the Commons in Anabel Taylor Hall. In addition, various departments sponsor lectures of more specialized interest. As a result there are usually four or five lectures on varied topics to choose from in a typical week during the summer period.

Summer Theatre

The summer program of the Department of Theatre Arts is part of the offerings of the Summer Arts Festival. For information on the productions to be presented and courses offered see p. 61.

Art Exhibitions

Herbert F. Johnson Museum of Art

Cornell's handsome new Herbert F. Johnson Museum of Art, designed by I. M. Pei and commanding a magnificent view of the lower Cayuga Valley, is now open to the public.

During the summer of 1973 the Museum will feature several temporary exhibitions as well as the University's permanent collection of Asian, European contemporary and graphic art.

The new Museum is located on Central Avenue and open daily, except Mondays, from 10 a.m. to 4:30 p.m. and on Sundays from 1 p.m. to 4:30 p.m.

Van Rensselaer Art Gallery

Student work from design courses in the Department of Design and Environmental Analysis is shown during the summer in Van Rensselaer Art Gallery (Room 317). Students, faculty, and visitors are cordially invited to visit the exhibition.

Gallery hours are 9 a.m. to 5 p.m. Monday through Friday.

Sports

Softball diamonds on Upper Alumni Field, tennis courts conveniently situated around the campus, and the eighteen-hole University golf course on Warren Road are available for use of Division of Summer Session students.

The gymnasium in Teagle Hall offers facilities to students for basketball, volleyball, and general workouts Monday through Friday from 9 a.m. to 5 p.m. Presentation of the Student's Official Registration Certificate is required for admittance.

Women students may use the gymnasium in Helen Newman Hall from 1 to 5 p.m. Monday through Friday. Equipment is available for badminton, basketball, and volleyball. Students must furnish their own gymnasium shoes.

Grumman Squash Courts

Facilities for squash and handball are available at Grumman Hall. Participants must furnish their own game equipment. Presentation of the Student's Official Registration Certificate is required for admittance.

Swimming

Swimming facilities in Teagle Hall pool will be available for male students Monday through Friday from 11 a.m. to 1 p.m. and for coed swimming from 1 to 2 p.m. Students will be admitted and a towel may be obtained upon presentation of the Student's Official Registration Certificate.

Women students may use the Helen Newman pool from 1 to 5 p.m. Monday through Friday. Towels and suits are provided, but students must furnish their own bathing caps. From 3 to 5 p.m. the pool will be open for coed swimming.

Intramural Softball League

Groups or individuals who wish to participate in softball competition should call 256-4286.

Private Lessons

The Department of Physical Education and Athletics sponsors private lessons in golf, tennis, and swimming.

Tennis: Hours to be arranged. Call Alf Ekman, 256-3653 or 272-8303, or Gwen Ritchie at Helen Newman Hall, 256-5133.

Golf: Hours and instructor in charge to be announced. Call Jim Fenner at the Cornell University Golf Club, 256-3361.

Swimming: Hours to be arranged. At Teagle Hall call 256-4065. At Helen Newman Hall call Carol Joy Brown, 256-5133.

Summer-Ithaca

A nonprofit community organization staffed by volunteers is beginning its thirteenth year of service to the community. Summer-Ithaca seeks to encourage the performing and visual arts for entertainment, recreation, and participation of residents and visitors during the summer months.

A calendar of varied events of interest to residents and visitors is published and distributed free of charge by Summer-Ithaca and the Ithaca Chamber of Commerce. Cornell University cooperates in developing this program of events. The scope of activities includes theatre, concerts, lectures, films, exhibitions, and recreation, designed to appeal to a wide range of ages and interests. All events, many without charge, are open to Division of Summer Session students and add to the attractiveness of summer in Ithaca.

Schedule of Courses

Course offerings of the Division of Summer Session are organized and described on pages 23-45 under the following classifications: the Three-Week Session, the Six-Week Session, the Eight-Week Session, Special Programs, and the Summer Arts Festival, with cross reference to those offerings which apply to more than one classification. The courses of instruction are listed alphabetically by department with few exceptions. For offerings in particular subject fields, consult the index.

Because of demands that may be placed upon the instructing staff, it is occasionally necessary to substitute an instructor for one named in the course descriptions. Changes in instructors prior to registration will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

The dean reserves the right to cancel any course for which, through unforeseen circumstances, satisfactory instruction cannot be provided.

U and G. The capital letter U in parentheses following a course title indicates that the course carries undergraduate credit; the letter G designates graduate-level courses. See p. 8.

Unit Courses, those of less than full length in the six-week or eight-week session, are indicated by a **u** following the course number, and their dates are given in the course descriptions. For further information on unit courses, see p. 10.

Courses Requiring Laboratory or Other Fees are marked by an asterisk (*). The course fee usually appears at the end of the course description.

Class Schedules. For most courses classes will meet five times a week, Monday through Friday, with no classes on Saturdays for the period of the session or Special Program. The hours of class meetings are contained in the course descriptions. Normally, three- or four-credit courses in the three-week session meet twice daily, seventy-five minutes per session; those in the six-week session meet daily for seventy-five minutes; and those in the eight-week session meet daily for fifty minutes. Evening courses meet twice weekly at the designated time.

Meeting Places of courses are given in the course descriptions. Any additions or changes in room assignments will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

Examinations. With a few exceptions, final examinations for all courses in the three-week session will be held Tuesday, June 26, at a time to be arranged by the instructor. Final examinations for all courses in the six- and eight-week sessions will be held on Thursday, August 9, and Friday, August 10, at the hours indicated by the following schedule. (The usual classrooms will be used unless a change is announced by the instructor.)

8 a.m. classes, Thursday at 8 a.m.
9 and 9:30 a.m. classes, Friday at 8 a.m.
10 a.m. classes, Thursday at 10:30 a.m.
11 and 11:30 a.m. classes, Thursday at 2 p.m.
12, 12:30, and 1 p.m. classes, Friday at 10:30 a.m.
1:40 and 2 p.m. classes, Friday at 2 p.m.
Unit courses, last class meeting.
Evening classes, last class meeting.

Deviations from the schedule will be permitted only if all class members and the instructor agree on the change and it has been determined that no student in the class has a conflict in time. The Division of Summer Session office should receive notification of any changes in schedules.

If no examination is to be given in a course, an announcement to that effect will be made by the instructor. In those cases, the last meeting of the class will be held at the time normally scheduled for the examination.



Courses for Summer Sessions

Three-Week Session June 6–June 26

Six-Week Session June 27–August 10

Eight-Week Session June 18–August 10

Three-Week Session

June 6–June 26

Students admitted to this session may also take courses in the six-week session and, in some cases, they may take a course in the eight-week session. In addition, they may elect one or more courses from among the Special Programs and the Summer Arts Festival (pp. 47–61) if granted permission by the program director and if there is no conflict in the time schedule of classes. Tuition for such courses is often not at the same rate as that charged for the regular sessions. See Special Program or Summer Arts Festival courses for rates that apply to them.

In most cases, departments offering courses in this session also offer courses in the six-week session (See pp. 26–44).

An asterisk (*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the course description. Course fees are *nonrefundable* and will not be prorated if a student cancels a course or withdraws.

Anthropology

Anthro. 150t The Discovery of the Americas (U,G).

Three hours credit. June 6 to June 26. M T W Th F 9:30–12. McGraw 305. T. F. Lynch.

An investigation of the discovery of the New World, beginning with American Indian origins in Asia and ending with the intellectual discovery by European chroniclers and travelers. Special attention will be given to the possibilities of Pre-Columbian transoceanic voyaging, especially from Europe. Readings will be taken from a wide variety of archaeological and anthropological sources, accounts of native American civilization by early Western observers, and the literature of the lunatic fringe.

Anthro. 218t Popular Cultural Anthropology: An Evaluation (U,G). Three hours credit. June 6 to June 26. M T W Th F 9:30–12. McGraw 303. D. J. Greenwood.

Through rapid popularization, anthropological ideas are said to have a considerable impact on our society, yet academic reviews of popular works (for example, Mead, Morris, Tiger, Montagu) are often negative. Through an examination of the content of "popular" works and comparison with "scientific" works on the same subjects, the course will determine whether the former faithfully represent the latter. If not, an attempt will be made to determine how scientific results are modified for popular consumption. If "popular" works adequately represent the field, then academic criticism can be termed unfair.

Architecture

***Arch. 525t The Rudiments of Photography (U,G).**

Three hours credit. June 6 to June 26. Enrollment limited to 20 students. M T W Th F 9–12, plus darkroom time of the student's choice (an average of two hours daily). Own 35 mm camera required. Sibley B–18. G. Simian. Novice photographers learn through experimentation with shooting, processing, and printing. Emphasis is placed on full control of the variables involved to enable effective previsualization. Technical and graphic aspects receive equal attention. Fee, \$10.

Computer Science

***Comp. Sci. 311t Introduction to Computer Programming (U,G).** Three hours credit. June 6 to June 26.

No prerequisites, but must have high mathematical aptitude. M T W Th F 9–11:30. Upson 330. E. Clemons. The purpose of this course is to teach the student how to program a digital computer in a higher level language (PL/1). The course will concentrate on the analysis of numerical and nonnumerical problems, formulation of these problems for automatic computation, construction of PL/1 algorithms which describe the computations, and their execution on the computer. This course will not deal explicitly with computer organization nor with machine language programming. For these topics see Computer Science 202, p. 29. Fee, \$20.

Education

Ed. 523t Administration of Continuing Education Programs (G). Three hours credit. June 6 to June 26.

M T W Th F 9–11:30. East Roberts 223. G. J. Broadwell and R. L. Bruce.

Topic: Creative Management of Youth Programs. Application of knowledge to the solution of problems and to the improvement of management skills and techniques. Consideration of new or potential directions for programming and management; business and government management models which have implications for planning 4-H and other youth-serving programs; basic theories of program management methodology. Development of practical models for application by analyses of the responsibilities of program managers; planning models and processes; theories of management; staffing patterns; strategies for effecting changes in management systems; principles of organization for management; administrative decision making; gaining acceptance for new management ideas; evaluation of program management.

Engineering

Chem. Eng. 5111 Mass and Energy Balances (U,G). See p. 32.

English

Engl. 145t Writing About Literature (U). Three hours credit. *June 6 to June 26.* Enrollment limited to 20 students. Open to freshmen and sophomores. M T W Th F 8:30–11. Goldwin Smith 236. M. J. Colacurcio. Intensive practice in various styles and techniques of writing about imaginative literature—appreciative, formal, thematic, historical. Texts to be chosen chiefly from works of American short fiction. A Freshman Seminar course.

Engl. 250t The Reading of Poetry (U). Three hours credit. *June 6 to June 26.* Enrollment limited to 25 students. M T W Th F 2–4:30. Goldwin Smith 246. P. L. Marcus. Readings in the major periods, modes, and genres of English and American poetry designed to widen the student's experience of poetry and sharpen his powers of understanding and response.

Government

Gov. 313t The Nature, Functions, and Limits of Law (U,G) (Also Law 600t). Four hours credit. *June 6 to June 26.* M T W Th F 11–12:15 and 3:30–4:45. Myron Taylor classroom D. R. S. Summers. A general education survey course for nonlaw students at the sophomore level and up. Law is presented not as a body of rules but as a set of varied techniques for dealing with such social problems as securing a healthy environment, keeping community peace, reinforcing the family, protecting basic freedoms, assuring some equality of opportunity, and controlling officials of the legal system. Consideration is given to the nonlegal factors bearing on the effectiveness of law. The limitations of law are stressed. Course materials consist mainly of judicial opinions, statutes, and other primary sources. Extensive use will be made of discussion techniques, but there will be some lecturing as well. The principal course material will consist of Summers and Howard, *Law, Its Nature, Functions and Limits*, 2d ed., 1972.

Gov. 340t Government and Politics of Latin America (U,G). Four hours credit. *June 6 to June 26.* M T W Th F 9–11:30. McGraw 145. E. Kenworthy. An introduction to the national politics of the larger nations in recent decades, offering alternative conceptions of power relations (e.g., pluralist, oligarchic). While external influences are not ignored, the focus is upon domestic politics.

Industrial and Labor Relations

ILR 504t Labor Dispute Settlement (G). Three hours credit. *June 6 to June 26.* Enrollment limited to twenty students. Open to graduate students and, with permission, to advanced undergraduates. M T W Th F 9:30–12:15. Ives 118. B. Yaffe. A historical and contemporary study of the role of government in the adjustment of labor disputes, particularly in public employment, including public education, uniformed employees (police and firemen), and other professional and nonprofessional employee classifications. Various governmental techniques for dealing with labor disputes, including mediation, fact finding, compulsory arbitration, and the use of injunctions will be analyzed. Significant attention will be given to various statutory procedures which have been utilized to resolve public sector negotiation impasses in lieu of granting public employees the right to strike.

Law

Law 600t The Nature, Functions, and Limits of Law (U,G). See Gov. 313t, above.

Department of Modern Languages and Linguistics

Students interested in enrolling in a modern language course should first read the description preceding the course offerings found on p. 37. Beginning intensive reading courses are offered in the three-week session. Individuals who have had some instruction in a language should register in the appropriate course in the six-week session.

French

Fr. 131t French Elementary Reading Course I (U,G). Three hours credit. *June 6 to June 26.* Twenty hours of instruction per week. J. S. Noblitt and staff. Designed to help students acquire a reading knowledge of the language.

German

Germ. 131t German Elementary Reading Course I (U,G). Three hours credit. *June 6 to June 26.* Twenty hours of instruction per week. P. Lowe. Designed to help students acquire a reading knowledge of the language.

Spanish

Span. 131t Spanish Elementary Reading Course I (U,G). Three hours credit. *June 6 to June 26.* Twenty hours of instruction per week. D. Stillman and staff. Designed to help students acquire a reading knowledge of the language.

Psychology

Psych. 325t Introductory Psychopathology (U,G). Three hours credit. *June 6 to June 26.* Prerequisite: one course in psychology. M T W Th F 10–12:30. Uris 204. R. D. Mack. An introduction to the study of the various forms of psychopathology especially as they relate to the experiences of human growth and development. The course is designed (1) to present a description of the major syndromes, investigations and theories of etiology and approaches to treatment, and (2) to provide the student with an opportunity to explore his own life experiences and the life experiences of others as they play a role in psychological health, growth, disturbance and self-defeat.

Sociology

Soc. 343t The Family (U,G). Four hours credit. *June 6 to June 26.* M T W Th F 9–11:30. Uris G-92. G. F. Streib. The concern is with the structure and function of the nuclear and extended family. Western societies receive major attention, but materials from non-Western societies will be used as case examples. Specific areas which will be examined include: biological foundations, mate selection, illegitimacy, sex and sexual controls, internal family processes, disorganization, differential class patterns. Attention will also be given to the diversity of family types and the myriad forms of adaptation found in a changing society like the U.S.



Six-Week Session

June 27–August 10

Students admitted to this session may also take courses in the three-week and eight-week sessions. In addition, they may elect one or more courses from among the Special Programs and the Summer Arts Festival (pp. 47–61) if granted permission by the program director and if there is no conflict in the time schedule of classes. Tuition for such courses is often not at the same rate as that charged for the regular sessions. See Special Program or Summer Arts Festival courses for rates that apply to them.

In many cases, departments offering courses in this session also offer courses in the three-week session (See pp. 23–26) and in the eight-week session (See pp. 44–45).

An asterisk (*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the course description. Course fees are *non-refundable* and will not be prorated if a student cancels a course or withdraws.

Africana Studies

ASRC 219 Issues in Black Literature (U,G). Four hours credit. M T W Th F 11–12:15. Uris G-8. J. Cunningham. Essentially a survey course concerned with individual black writers and the respective esthetic, religious, and intellectual movements to which they are either committed or in revolt against. The works, activities, and times of these writers will be studied with a view to examining the extent and the variety of ways in which basic contemporary black thought and beliefs are reflected by them. Special consideration will be given to the creative tensions resulting from conflicting efforts to apply such beliefs and the thinking on the part of black writers and thinkers, individually and collectively.

Agricultural and Occupational Education

See pp. 47–48.

Agricultural Engineering

See p. 48.

Agronomy

Agron. 411 Natural Resource Potential for Food Production in the Tropics (U,G). Three hours credit. M T W Th F 8–9:15. Bradfield 105. M. Drosdoff. A general survey course designed for students without much agricultural background who are interested in getting a perspective of the climates, soils, crops, and management practices in tropical regions. The prospects of the tropics for increased agricultural production will be assessed with major emphasis on the natural resource potential.

Animal Science

See p. 48.

Anthropology

Anthro. 101 Introduction to Cultural Anthropology (U,G). Three hours credit. M T W Th F 2–3:15. McGraw 165. D. R. DeGlopper.

A comparative study of the organization of cultural behavior in systems of communications, technology, social relations, ritual, ideas, and sentiments; the relation of such systems to personal behavior and to continuity, change, and cultural transfer in history. Illustrative materials drawn largely from non-Western societies.

Anthro. 102 The Evolution of Man (U,G). Three hours credit. M T W Th F 9:30–10:45. McGraw 303. K. A. R. Kennedy. Anthropology 101 is not prerequisite to 102. A survey course of human evolution with particular attention to the biological history of the primates, the fossil record, the concept of race, human variation and adaptation, and the role of culture in understanding on-going processes of evolution in modern man. Man's behavioral evolution is studied in the light of the archaeological records of his past, in the current findings of primate ethology, and in the context of the different ecological settings that have affected the course of our biological history.

Anthro. 150t The Discovery of the Americas (U,G). See p. 23.

Anthro. 218t Popular Cultural Anthropology: An Evaluation (U,G). See p. 23.

Anthro. 221 The Biology of Man (U,G). Three hours credit. M T W Th F 11–12:15. McGraw 303. W. A. Stini. A survey of important biological characteristics of the human species. Considerable emphasis will be given to human growth and development and the effects of the environmental factors on the phenotypic expression of genetic traits. The interaction of various human populations and their environments as seen in disease and nutritional stress will be discussed with reference to actual case-study material.

Anthro. 322 Comparative Religious Systems (U,G). Four hours credit. M T W Th F 9:30–10:45. McGraw 303. D. R. DeGlopper.

The course will consider various attempts to solve the problem of understanding alien religious systems. Problems of definition and those posed by several alternate modes of explanation will be considered. Close attention will be given to examples from Africa, the South Pacific, and China.

Anthro. 372 Origins of Human Races (U,G). Three hours credit. M T W Th F 8–9:15. McGraw 303. W. A. Stini. A detailed analysis of the forces producing differences between human populations. Selected examples from the fields of genetics, epidemiology, demography, and adaptive physiology are presented with reference to the significance in the evolution of contemporary human variation. The concept of race as a biological phenomenon is reviewed in the light of contemporary taxonomic principles.

Anthro. 497 Methodology of Teaching Human Evolution (U,G). Four hours credit. M T W Th F 2–3:15. McGraw 305. K. A. R. Kennedy.

A seminar on teaching and research methodologies in biological anthropology designed for prospective teachers of anthropology and human evolution at grade school, college, and university levels. Activities will include critical reviews of films and related audiovisual teaching aids, analyses of major texts and readers, study of sources on the teaching of biological anthropology, and field trip. Professionally active colleagues will be invited to present their views as guests of the seminar.

Architecture

Arch. 119 Elective Design (U). See p. 49.

Arch. 125u Issues and Methods in Architecture (U). Six hours credit. June 27 to July 31. Registration restricted to out-of-department students. Previous drawing experience is not required. Consent of the instructor required. Morning and afternoon sessions to be arranged. P. Shaw and C. W. Pearman.

The course is offered as an introduction to architecture and related environmental design fields. It comprises two concurrent sequences: (1) an orientation to environmental design issues through lectures, discussions, and field trips, and (2) an introduction to design through a series of projects exploring analytic and synthetic operations. Equipment cost per student approximately \$30.

Arch. 150 Elective Design (U). See p. 49.

Arch. 227 Concepts of Structural Systems (U,G).

Three or four hours credit. Prerequisite: a course in structural concepts (Arch. 204 or equivalent). Time and place to be arranged. B. J. Fournier.

Qualitative and quantitative analysis and design of structures is presented through a comprehensive investigation of the most typical structural systems. Rigid frame systems used for low rise as well as high rise buildings are focused. The major objective of the course is to comprehend the basic structural concepts rather than detailed design methods. Concepts are to be illustrated through a review of case studies of outstanding and typical realizations. Flexibility remains in order to adapt the course to the investigation of structures to be used in the design course.

Arch. 484 Practice in Architectural Aspects of Archaeological Field Work (U,G). See p. 49.

Arch. 525t The Rudiments of Photography (U,G). See p. 23.

Arch. 527 Advanced Workshop in Black and White Photography (U,G). Three hours credit. Prerequisite: Arch. 525 or 526 or demonstrable proficiency in printing black and white. Enrollment limited to 20 students. 35 mm camera required. M T W Th F 9:30-10:45, plus darkroom time of the student's choice (an average of two hours daily). Sibley B-18. G. Simian.

Students extend their technical competence and ability to communicate through photography. Individual work on photographic essays is paralleled by classwork in advanced techniques. Student cooperation, as well as individual instruction, is emphasized throughout the course. Fee, \$15.

Introductory Program in Architecture. See p. 49.

Art

See History of Art, p. 36; Psychology 305, p. 41; and Studios in Art, p. 61.

Astronomy

Astro. 105 A Rough Sketch of Our World (U). Three hours credit. M T W Th F 11-12:15. Ives 110. D. W. Oldsmith.

How do we measure the size of our galaxy and the size of the Universe? Is the Universe round or flat? How are the stars born, why do they shine, and how do they die? What are the chemical elements and how were they formed in stars? How was the solar system formed? What are the environments of other planets like? What is

the basic structure of the Earth? How about the other planets? Will Man catastrophically alter the Earth? Does life exist elsewhere in the Universe? How can we find out?

Biological Sciences

Bio. Sci. 131 Introductory General Biochemistry, Lectures (U). Six hours credit. Prerequisite: one unit of high school chemistry. One unit of high school biology not required but highly desirable. M T W Th F 9-11. Reports and discussion period to be arranged. Riley-Robb 125. A. L. Neal.

Designed for students interested in the biological sciences who wish to obtain a biochemical foundation for further studies in this field. The fundamental principles of general, organic, and biological chemistry are presented with emphasis on chemical processes that occur in living organisms. Selected topics are discussed in a manner which gives a comprehensive introduction to the principles involved. Biologically active compounds are used extensively to illustrate basic organic reactions which, in turn, serve as a specific introduction to biochemical topics including the degradation and synthesis of biologically active compounds and their interrelationships. The level of the course is indicated by the text: A. Leslie Neal, *Chemistry and Biochemistry, A Comprehensive Introduction*, McGraw-Hill Book Company, 1971.

Bio. Sci. 301 Laboratory Methods in Biology (U,G).

Three hours credit. Prerequisite: Bio. Sci. 1012 or equivalent. M T W Th F 1:30-4. Stimson 206. L. D. Uhler.

For students who intend to teach or follow some phase of biology as a profession. Subjects covered: collection, preservation, and storage of materials, the preparation of bird and mammal study skins; injection of circulatory systems with latex, clearing and staining of small vertebrates; and the preparation and staining of squashes, smears, whole mounts, and sections. No formal examinations. Grade is based on required work, submitted at the end of the course.

Bio. Sci. 361 General Ecology (U,G). Three hours credit. Prerequisites: Biol. Sci. 1012 or equivalent.

Lectures, M T W Th F 11-12:15. Fernow 210. Afternoon field trips to be arranged.

Principles concerning the interactions between organisms and their environment. Influence of competition, social behavior, predation, and other factors on population size and dispersion. Role of energy flow and mineral cycling in determining the structure and productivity of ecosystems. Succession and classification of natural communities. Influence of climate and past events on the diversity and stability of communities in different regions of the world. Interspecific competition and the niche concept. Chemical interactions between organisms. Application of ecological principles to human problems. Modern evolutionary theory will be stressed throughout and attention given to conflicting ecological hypotheses.

Bio. Sci. 364u Introduction to Marine Science (U,G). See p. 56.

Bio. Sci. 431 Principles of Biochemistry, Lectures (U,G).

Four hours credit. Prerequisite: elementary organic chemistry (Chem. 353) or equivalent. M T W Th F 8-10. Riley-Robb 105. J. M. Griffiths.

A basic course dealing with the chemistry of biological substances and their transformations in living organisms. The major areas of biochemistry will be covered comprehensively. This course, designed for advanced undergraduates and graduate students, is appropriate as a terminal course as well as serving as a prerequisite for the intermediate and advanced courses in biochemistry that are offered during the academic year.

Bio. Sci. 472 Ornithology (U,G). Four hours credit. Prerequisite: basic course in biology or zoology. Lectures, M W F 8-9:15, plus morning field trips, 5:30-8, and two weekend trips. Stimson 105. J. Tate. Introduction to the biology of birds, including the unique features of avian anatomy and physiology, classification, evolution, distribution, ecology, and behavior. Local field trips and two weekend trips to outstanding bird concentrations.

Bio. Sci. 472L Ornithology Laboratory (U,G). Two hours credit. Enrollment limited to students who are coregistered in Bio. Sci. 472. Laboratory, M W F 2-4:30. Stimson 316. J. Tate.

Consists of a class project and report with emphasis on nesting, reproduction, and growth which will be made to correspond to the field season. Laboratory will include external and internal morphology, molts, and plumages. Identification of birds of New York State and bird families of the world made from study skins. Demonstration laboratories will include bird photography and sound recording as research tools.

See also Ornithology Field Seminar for Adults and Family Groups, p. 56.

***Bio. Sci. 1012 General Biology (U).** Six hours credit. Lectures, M T W Th F 9:30-11:50. Malott 405. Laboratory, M T W Th F 1:30-4:30. Roberts 392. C. H. McFadden and staff.

Designed for students intending to specialize in some aspect of biology or biochemistry, or in closely related subject areas. Plant and animal materials are considered together rather than in separate units. This course covers cellular biology, the biochemistry of metabolism, physiology, anatomy, behavior, genetics, developmental biology, evolutionary theory, the biology of populations and communities, the origin of life, and the evolutionary patterns in the plant and animal kingdoms. Each topic is considered in the light of modern evolutionary theory. The laboratory work is designed to give firsthand experience with the materials discussed in lecture. Fee, \$25.

Biology of Man. See Anthro. 221, p. 26.

Biology of the Honey Bee. See Ent. 262, p. 35.

Chemistry

Students and members of the teaching staff are required to wear safety glasses or prescribed eye protective devices in all chemistry laboratories.

***Chem. 107u General Chemistry (U).** Three hours credit. June 27 to July 20. Prerequisites: at least two units of mathematics, and one unit or more of secondary school chemistry. Registration permitted only to students who register for Chem. 108u. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory, M T W Th F 10-1. Baker Laboratory 101.

The important chemical principles and facts are covered, with considerable attention given to the quantitative aspects and to the techniques which are important for further work in chemistry. Texts: Sienko and Plane, *Chemistry, Principles and Property*; Sienko and Plane, *Experimental Chemistry*, 4th ed. Fee, \$7.50.

***Chem. 108u General Chemistry (U).** Four hours credit. July 23 to August 10. Prerequisite: Chem. 107u or equivalent. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory, M T W Th F 10-1, Baker Laboratory 101.

This course is a continuation of Chem. 107u and serves as prerequisite for Chem. 236 or 353. The laboratory

includes qualitative analysis. Texts: as listed above for Chem. 107u. Fee, \$7.50.

***Chem. 107 General Chemistry (U).** Three hours credit. Prerequisite: high school chemistry and two units of mathematics. Recommended for those students who will take further courses in science. Lectures, M T W Th F 11-12:15. Recitations, two one-hour sessions a week, to be arranged. Lectures and recitations in Baker Laboratory 335. Laboratory, M W F 2-4, Baker Laboratory 101. The important chemical principals and facts are covered with considerable attention given to the quantitative aspects and to the techniques which are important for further work in chemistry. Texts: Sienko and Plane, *Chemistry, Principles and Property*; Sienko and Plane, *Experimental Chemistry*, 3d ed. Fee, \$15.

***Chem. 251 Introduction to Experimental Organic Chemistry (U).** Two hours credit. Must be taken with Chem. 353. Laboratory, M T W Th F 10-1, Laboratory-lectures, M W 2-3:30. Baker Laboratory 201. An introduction to synthesis and the separation and handling of materials including applications of many types of chromatography; simple and fractional distillation; crystallization; extraction; etc. Text: Adams, Johnson, and Wilcox, *Laboratory Experiments in Organic Chemistry*, 6th ed. Fee, \$15.

Chem. 353 Elementary Organic Chemistry (U). Four hours credit. Prerequisite: Chem. 104 with a grade of at least C-, or 108, or 116, or equivalent. Primarily for students in the premedical and biological curricula. The student should determine the entrance requirements for the particular medical school he wishes to enter. Lectures, M T W Th F 8-9:50, Baker Laboratory 119. An integrated study of aliphatic and aromatic organic compounds, their occurrence, methods of preparation, reactions, and uses. The relationship of organic chemistry to the biological sciences stressed. Text: Morrison and Boyd, *Organic Chemistry*.

Classics

Greek

Greek 101u Greek for Beginners (U). Three hours credit. June 27 to July 20. Must be taken with Greek 102u. Lectures, M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 120A. Introduction to Attic Greek. Designed to enable the student to read the ancient authors as soon as possible.

Greek 103u Attic Greek (U). Three hours credit. July 23 to August 10. Open only to students registered in Greek 101u. Same time schedule as Greek 101u. Readings from Plato.

The History of Classical Greece. See History 433, p. 36.

Latin

Latin 105u Latin for Beginners (U). Three hours credit. June 27 to July 20. Must be taken with Latin 106u. Lectures, M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 120C. An introductory course in the essentials of the Latin language, designed for rapid progress toward reading principal Latin authors.

Latin 106u Latin for Beginners (U). Three hours credit. July 23 to August 10. Open only to persons registered in Latin 105u. Same time schedule as Latin 105u. Selected readings.

Department of Modern Languages and Linguistics. See pp. 37-40.

Community Service Education

See pp. 52-54.

Comparative Literature

Comp. Lit. 102 The Art of Narrative (U). Three hours credit. Enrollment limited to 20 students. M T W Th F 9:30-10:45. Goldwin Smith 183. W. J. Kennedy. In a reading and discussion of texts by Austen, Conrad, Faulkner, Gogol, Mann, Nabokov, and others, this course will attempt to cover a variety of possibilities and problems involved in narrative writing. Questions of material and conventions, composition and style, and point of view and narrative attitudes will be examined to illustrate the process of structuring which finally generates a specific text out of the general field of narrative.

Comp. Lit. 103 Varieties of the Imagination in Literature (U). Three hours credit. Enrollment limited to 20 students. M T W Th F 11-12:15. Goldwin Smith 183. R. Roopnaraine. Discussion of a series of dramatic and narrative works starting with the most "realistic" and moving towards various grotesque, ironic, fantastic, and romantic forms. Such a progression raises the questions of literary reality, i.e., what constitutes a writer's world, and of the uses and functions of the imagination as the faculty which integrates and transforms ordinary language and reality into a literary structure. Readings will include works by Beckett, Ibsen, Joyce, Kafka, Miller, Shakespeare, and Tolstoy.

Issues in Black Literature. See ASRC 219, p. 26.

Medieval Literature and Culture. See Engl. 101, p. 33.

Computer Science

***Comp. Sci. 202 Computers and Programming (U,G).** Three hours credit. Some programming experience in an algebraic language highly desirable but not required. M T W Th F 12:30-1:45. Upson 351. S. S. Muchnick.

Intended as a foundations course in computer programming. Algorithms and their relation to computers and programs. Analysis of algorithms in terms of space and time requirements. A procedure-oriented language; specification of syntax and semantics, data types and structures, statement types, input-output, program structure. A brief introduction to machine organization. Programming and debugging problems on a computer are essential parts of the course. Fee, \$20.

***Comp. Sci. 311 Introduction to Computer Programming (U,G).** Three hours credit. No prerequisites, but must have high mathematical aptitude. M T W Th F 12:30-1:45. Upson 330. (Also offered in the three-week session.) D. Bergmark.

The purpose of this course is to teach the student how to program a digital computer in a higher level language (PL/I). The course will concentrate on the analyses of numerical and nonnumerical problems, formulation of these problems for automatic computation, construction of PL/I algorithms which describe the computations, and their execution on the computer. This course will not deal explicitly with computer organization nor with machine language programming. For these topics see Computer Science 202. Fee, \$20.

***Comp. Sci. 401 Introduction to Computer Systems and Organization (U,G).** Four hours credit. Prerequisite: Comp. Sci. 202 or 311 or equivalent programming experience. M T W Th F 12:30-1:45. Also laboratory, time to be arranged. Upson 207. T. Szymanski.

An introduction to machine-level programming, with specific reference to the IBM 360. The machine instruction set, internal representation of program and data. The operating system, input/output, and interrupts.

Assembly language programming and the assembly process. Subroutines, macros, recursion, and the implementation of stacks. The writing of programs in assembler is an integral part of the course. Assignments will be selected from simple exercises in computation, string manipulation, compilation and/or assembly. Fee, \$20.

Consumer Economics and Public Policy

See p. 54.

Design and Environmental Analysis

See pp. 54-55.

Economics

Econ. 101 Introductory Economics (U). Three hours credit. M T W Th F 9:30-10:45. Uris G-14. J. T. Yoon. Concentration on the determinants of aggregate economic activity. Main areas studied are the monetary and banking systems, the composition and fluctuations of national income, and the major determinants of economic growth—all as influenced by monetary, fiscal, and other policies.

Econ. 102 Introductory Economics (U). Three hours credit. M T W Th F 11-12:15. Uris G-14. A. Kats. A survey of the existing economic order with particular emphasis on the salient characteristics of the modern American economy. The concentration is on explaining and evaluating the operation of the price system as it is modified and influenced by private organizations and governmental policy.

Econ. 311 Intermediate Microeconomic Theory (U,G). Four hours credit. Prerequisite: Econ. 102 or equivalent. M T W Th F 9:30-10:45. Uris 460. N. R. Chen. Analysis of the pricing processes in a private enterprise economy under varying competitive conditions and their role in the allocation of resources and the functional distributions of national income.

Econ. 312 Intermediate Macroeconomic Analysis (U,G). Four hours credit. Prerequisite: Econ. 101 or equivalent. M T W Th F 11-12:15. Uris 460. N. R. Chen. An introduction to the theory of national income determination and economic growth in alternative models of the national economy; the interaction and relation of aspects of these models to empirical aggregate economic analyses.

Econ. 318 Intermediate Mathematical Economics (U,G). Four hours credit. Prerequisite: Economics 101-102 or equivalent. M T W Th F 9:30-10:45. Uris 488. A. Kats. The course will include discussion of set theory, functional dependence, basic elements of calculus, tests for extreme values with or without constraints and elements of matrix algebra. The economic applications will include static microeconomic analysis, linear programming, and game theory.

Econ. 338 Macroeconomic Policy (U,G). Four hours credit. Prerequisite: Economics 312 or equivalent. M T W Th F 9:30-10:45. Uris 438. S. K. Singh. A study of the use of fiscal and monetary policies for achieving full employment, price level stability, and appropriate economic growth.

Econ. 372 Processes of Economic Growth and Development (U,G). Four hours credit. Prerequisites: Econ. 101 and 102 or consent of the instructor. M T W Th F 11-12:15. Uris 438. S. K. Singh.

A consideration of various contributions by economists and others to an understanding of how societies undergo economic growth and institutional change. Developing countries are the main focus of attention. Some possibilities of combining elements from economics and other fields to form a broad approach to economic development are explored.

Econ. 611 Advanced Microeconomic Theory (G). Four hours credit. Prerequisite: Econ. 509-510 or its equivalent. M T W Th F 11-12:15. Uris 488. D. Schmeidler. Selected topics in advanced economic theory and theory of games.

Economic and Social Statistics. See ILR 510, p. 37.

Education

The following courses are presented to serve public and private school personnel and other persons interested in professional preparation and improvement.

Courses designated with a u after the course number are of less than six weeks' duration. Since the normal course load is six credit hours for the six-week session, combinations of courses which significantly increase this limitation cannot be approved. Therefore, it is not possible to register for two 3-credit hour courses offered in the same three-week period. Two unit courses offered in successive periods, or one 3-credit unit course plus a 3-credit course in the six-week session will be approved.

Ed. 406 Field Natural History (U,G). Three hours credit. Recommended: an introductory course in college biology. M W 2-5:30. Stone 7. V. N. Rockcastle. Outdoor studies of the plants and animals of the Northeast, their ecology, and their use in environmental education and field biology courses. One evening field trip and a weekend camping trip will be included as extensions of the afternoon field trips to nearby natural areas.

Ed. 417 Psychology of Adolescence (U,G). Three hours credit. Prerequisite: an introductory course in psychology or equivalent. M T W Th F 9:30-10:45. Warren 101. D. Evans.

A survey of the nature of adolescent growth and development with emphasis on some of the causal factors pertaining to education of adolescents. May be applied toward certification of secondary school teachers and guidance counselors.

Ed. 433u Special Problems, Organizing and Conducting Adult Occupational Education Programs (U,G). See p. 48.

Ed. 470 Educational Issues (U,G). Three hours credit. M T W Th F 9:30-10:45. Stone 101.

A critical examination of theories, policies, and practices.

Ed. 475 Freedom and Authority in Education (U,G). Three hours credit. M T W Th F 11-12:15. Stone 101. K. A. Strike.

An analysis of the concept of freedom in both political and psychological contexts and an application of the resulting analysis to problems of freedom and authority in education.

Ed. 499 Informal Study in Education (U,G). Maximum credit, three hours. Members of staff.

The privilege of informal study is granted to a qualified junior, senior, or graduate student, when approved by an adviser from the Department of Education staff who is personally responsible for the study. Two purposes are sanctioned: (1) to engage in a study of a problem or topic not covered in a regular course; and (2) to undertake tutorial or honors study of an independent nature in the

area of the student's research interests. The program is not designed as a supplement to a regular course for the purpose of increasing the content and credit allocation of that course.

Ed. 500 Special Studies (G). Credit as arranged. Limited to graduate students working on theses or other research projects. Each registration must be approved by a staff member who will assume responsibility for the work. Members of the staff.

Ed. 511 Educational Psychology (U,G). Three hours credit. Prerequisite: an introductory course in psychology or equivalent. M T W Th F 11-12:15. Warren 101. D. Evans. Includes consideration of basic theoretical issues and relevant evidence in respect to learning, perception, cognition, motivation, ability structure, and attitudes. Trends in theory and research will be the focal points for reading and class discussion.

Ed. 523t Administration of Continuing Education Programs (G). See p. 23.

Ed. 544u Teaching Reading and Study Skills in Community College (U,G). Three hours credit. June 27 July 20. M T W Th F 9:30-11:20, third hour to be arranged. Warren 261. W. Pauk. Designed for teachers of reading in secondary schools, community colleges, junior colleges, technical colleges, four-year colleges, as well as guidance counselors, deans of students, classroom teachers, and school administrators who desire to know the component parts of reading program. The focus, however, will be on how to meet the reading, writing, and study needs of community college students. Specific techniques and methods designed to help students achieve academic success will be demonstrated, explained, and discussed.

Ed. 555 Use and Interpretation of Tests in Guidance and Personnel Administration (G). Three hours credit. M T W Th F 8-8:50. Additional hour to be arranged. Barnes 203. H. G. Andrus. Open to students in guidance or personnel administration and to classroom teachers who expect to work with standardized group tests. Deals with the historical development, use, and interpretation of aptitude tests as a basis for guidance and selection in public schools, colleges, and/or industry. Designed to meet the New York State certification requirement for guidance counselors.

Ed. 582 Educational and Vocational Guidance (G). (evening) Two hours credit. M W 7-9 p.m. East Roberts 223. C. W. Bresee.

An introductory course dealing with vocational development theory and the practice of guidance. For teachers, administrators, and counselors. Required for provisional certification in guidance.

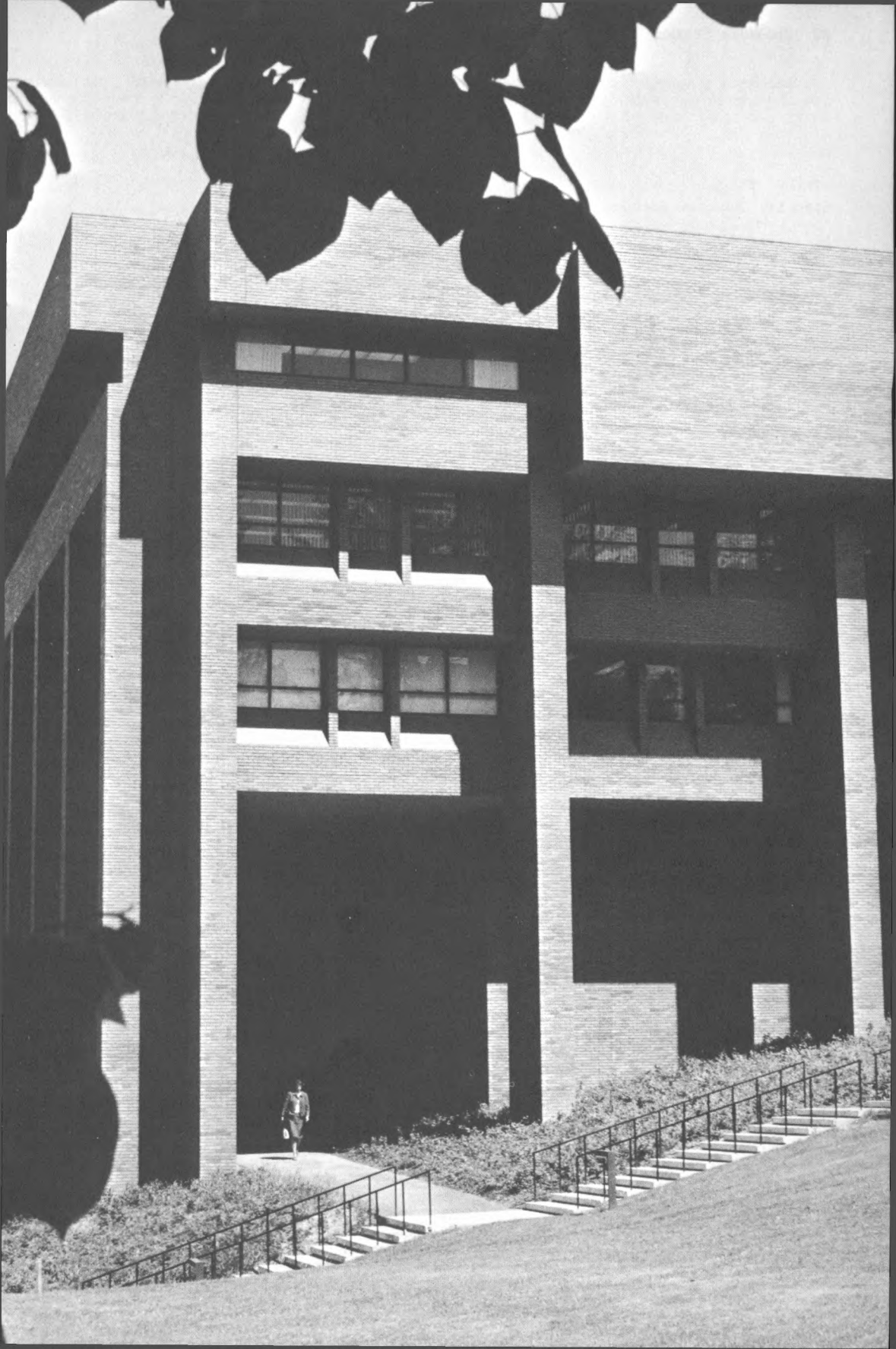
Ed. 585 Occupational and Educational Information (G). Four hours credit. M T W Th F 9:30-10:20. Laboratory, T Th 2-4:15. Warren 360. P. Lewin.

Survey and appraisal of occupations and training opportunities. Study of sources of educational and vocational information, job analysis, and vocational trends. Field trips to places of employment.

Ed. 586u Organization and Administration of Guidance Programs (G). Two hours credit. July 2 to July 20.

Prerequisite: provisional certification in guidance. M T W Th F 12:30-2:10. East Roberts 223. C. W. Bresee. Principles and practices in planning and conducting a guidance program and other pupil personnel services. This is one of the courses required for permanent certification in guidance in New York State.

Ed. 587u Practicum in Measurement and Appraisal for Counselors (G). Two hours credit. July 2 to July 20. Prerequisite: a course in psychological testing. M T W Th



32 Six-Week Session

10–11:40. East Roberts 223. H. G. Andrus.

An advanced course in the use of tests and test results in the psychological appraisal of individuals. Emphasis will be placed on analysis of testing programs, intensive examination of selected standardized tests, and laboratory experience in interpreting test results. Designed to meet a New York State permanent certification requirement for guidance counselors.

Ed. 589u Affective Education (G). Two hours credit. July 2 to July 20. Enrollment limited to 24 students. M T W Th F 8–9:40. East Roberts 223. P. R. Russell. Affective education is the developing curriculum area designed to teach the student skills for understanding and guiding his own personal development. This course will utilize an experience-based, participatory design to develop basic interpersonal and small group skills, and to introduce a conceptual framework for the design, application, and evaluation of humanistic education techniques and courses. The course is appropriate for counselors, teachers, and administrators concerned with the development of psychological education offerings in the school or college. Meets New York State permanent certification requirement for counselors, optional courses category.

Ed. 630u Seminar in Occupational Education (G). See p. 48.

Ed. 668 Seminar in Educational Administration (G). Three hours credit. M T W Th F 10–11:15. Bradfield 105. Coordinator, J. Wilcox. Topic: Administration of occupational education.

Linguistics and the Teaching of English (U,G). See Ling. 214, p. 38.

Methodology of Teaching Human Evolution (U,G). See Anthro. 497, p. 26.

Special Programs of Interest to Teachers

Agricultural and Occupational Education Summer Program, p. 47.

Institute in Environmental and Stochastic Models, p. 51.

Human Ecology Unit Courses, pp. 52–55.

Engineering

Chemical Engineering

Chem. Eng. 5111 Mass and Energy Balances (U,G). Three hours credit. Prerequisite: one year of freshman chemistry. Self-paced audiovisual instruction only, at the convenience of the student. Olin 265. (Also offered in the three-week and eight-week sessions.) R. G. Thorpe. Engineering problems involving material and energy balances. Batch and continuous reactive systems in the steady and unsteady state. Humidification processes. A minimum of seventy clock hours of audiovisual instruction is required to master the subject matter. Student performance is evaluated by nine quizzes, two preliminary examinations, and a final examination. Superior students may earn exemption from the final examination.

Engineering Cooperative Program Summer Term

See p. 50.

Engineering Short Courses

See p. 51.

Civil and Environmental Engineering

C & EE 2401 Elements of Soil Mechanics (U). Three hours credit. Lectures, M T W Th 8–9:15. Laboratory, T Th 2–4:30. Hollister 202. Staff. Soil properties; chemical nature; particle size distribution; Atterberg limits; permeability; principle of

effective stress; compressibility; shear strength; the consolidation process. Introduction to bearing capacity, earth pressure, slope stability, settlement, seepage, and the solution of practical problems. Laboratory tests for the measurement of soil properties.

C & EE 2701 Structural Engineering I (U). Four hours credit. Prerequisite: Mechanics 1021 or equivalent. Lectures, M T W Th F 9:30–10:45. Laboratory, M W 2–4:30. Hollister 372. Staff.

First course in a three-course sequence of structural theory, behavior, and design. Basic structural concepts. Basic structural forms. External forces and simple structures. Cable structures and prestressing concepts. Behavior under load of metal members (beams, compression members, and beam-columns), including elastic and inelastic buckling. Properties and behavior of reinforced concrete and behavior of reinforced concrete beams, columns, and beam-columns.

Computer Science

See pp. 23, 29, and 51.

Electrical Engineering

Elec. Eng. 4210 Introduction to Electrical Systems (U). Three hours credit. Prerequisites: Math. 192 and Physics 112 or their equivalents. Lecture-recitations, M T W Th F 9:30–10:45. Phillips 320. W. H. Erickson. A core-science course intended to develop competence in several analysis skills appropriate to the field of electrical engineering and to impart understanding of the physical basis for the concepts associated with the skills. Topics include: electrical circuit elements (resistors, capacitors, inductors, independent sources, and branch relationships); time functions and their representation (real exponentials, complex numbers, trigonometric functions, and complex exponentials); response of simple networks and the impedance concept (natural response, forced response to periodic excitation, and pole-zero concepts); circuit equations and methods of solution (branch equations, Kirchhoff's laws, nodal and mesh equations, matrix methods of solution, and Norton and Thevenin equivalents); controlled sources and modelling of devices (representation of idealized electronic and electromechanical devices).

Industrial Engineering and Operations Research

OR 9160 Introductory Engineering Probability (U). Three hours credit. Prerequisite: Math 112 or 122 or 19 or equivalent. M T W Th F 9:30–10:45. Upson 351.

At the end of this course a student should have a working knowledge of some of the basic tools in probability theory and their use in engineering. This course may be the last course in probability for some students or it may be followed by a course in probability or statistics. The topics include: a definition of probability; basic rules for calculating with probabilities when the number of possible outcomes is finite; discrete and continuous random variables; probability distribution and density functions; expected values, jointly distributed random variables, and marginal and conditional distributions; special distributions important in engineering work: the normal, exponential, binomial, Poisson, and other distributions, and how they arise in practice; and Markov chains and applications.

OR 9522 Operations Research I (G). Three hours credit. Prerequisite: some knowledge of linear algebra. M T W Th F 11–12:15. Upson 330. S. Stidham. Model design, methodology of operations research, linear programming, transportation problem, assignment problem, dual theorem, parametric linear programming, integer programming, nonlinear programming, dynamic programming, introduction to inventory theory, game theory, comprehensive problems, and case studies.

Mechanical Engineering

Tech. Eng. 3020 Technology and Society—A Historical Perspective (U). Three hours credit. M T W Th F 11:12:15. Upson 215. B. J. Conta.

An introduction to the history of technology and its relationship to society. Emphasis will be upon the interactions between technology and the corresponding economic, social, and political developments of the period, rather than upon the internal history of technology. The period of major interest will be the nineteenth and twentieth centuries. Both the material abundance and the explosive problems of the twentieth century had their origins in two dramatic developments of the nineteenth century. One was the emergence of the Watt steam engine as a general purpose prime mover and the vast increase in available power it made possible by the exploitation of the thermal energy of wood and the fossil fuels. A second and less obvious development was a change in the technological motivation. Technology changed from a response to the needs of man (necessity as the mother of invention) to a response to the possibilities of science (invention as the mother of necessity—the technological imperative).

Calculus for Engineers. See Math. 192, p. 44.

Engineering Mathematics. See Math. 294, p. 44.

English

Engl. 101 Early English Literature in its Cultural Settings (U). Three hours credit. Enrollment limited to 20 students. Open to freshmen and sophomores. M T W Th F 8–9:15. Goldwin Smith 124. R. T. Farrell. The first three weeks will concentrate on *Beowulf* and other major Anglo-Saxon poems in translation; the second half on Chaucer and his age. The backgrounds of the literature will be studied, and historical, cultural, and archaeological perspectives will be provided. Extensive use will be made of slides, film, and videotapes. Students will be expected to write on the materials under discussion from as broad a perspective as possible. A Freshman Seminar course.

Engl. 102 English as a Second Language (U,G). See p. 51.

Engl. 135 Writing about Experience (U). Three hours credit. Enrollment limited to 20 students. Open to freshmen and sophomores. M T W Th F 8–9:15. Goldwin Smith 236. Designed primarily to give the student practice in writing about his own experience, either in the present—here at Cornell—or in the past. Most of the class time will be given to the student's own work. A Freshman Seminar course.

Engl. 157 American Fiction and Culture (U). Three hours credit. Enrollment limited to 20 students. Open to freshmen and sophomores. M T W Th F 8–9:15. Goldwin Smith 160. M. J. Colacurcio. Nineteenth-century novels which comment on emerging patterns of American manners and morals. Hawthorne, James, Howells, and Twain are central, and various other writers are included at the option of the instructor. A Freshman Seminar course.

Engl. 237 The Reading of Fiction (U). Three hours credit. Enrollment limited to 22 students. M T W Th F 1:30–2:45. Goldwin Smith 246. E. Rosenberg. Forms of modern fiction, with emphasis on the short story and the novella. Critical studies of works by English and American as well as Continental writers, from 1880 to the present: Chekhov, James, Conrad, Faulkner, Mann, Kafka, and others.

Engl. 250t The Reading of Poetry (U). See p. 24.

Engl. 301 Women and Autobiographical Writing (U,G). See Wom. St. 301, p. 44.

Engl. 303 Creative Writing Workshop: Explorations (U,G). Four hours credit. M T W Th 11–12:15 and conferences to be arranged. Goldwin Smith 246. B. L. Hathaway.

A workshop for the development of talent and skills in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussion and in conference with the instructor. This course is a component of the Summer Arts Festival. See p. 59.

Engl. 304 Women in Elizabethan and Jacobean Drama (U,G). See Wom. St. 304, p. 44.

Engl. 320 Romantics and Moderns (U,G). Four hours credit. M T W Th F 1:30–2:45. Goldwin Smith 236. S. M. Parrish. Romantic voices in two generations of poets a century apart. Readings in Blake, Wordsworth, and Shelley; Hopkins, Hardy, and Yeats.

Engl. 327 American Literature from the Beginning to the Civil War (U,G). Four hours credit. M T W Th F 9:30–10:45. Goldwin Smith 236. J. P. Bishop. A survey of significant American writing from the Puritans through the Transcendentalists, including selections from Edwards, Franklin, Irving, Poe, and Emerson, together with Hawthorne's *Scarlet Letter* and Thoreau's *Walden*.

Engl. 354 Science Fiction (U,G). Four hours credit. M T W Th F 9:30–10:45. Goldwin Smith 124. J. Dann. A study of modern science fiction novels and short stories with an emphasis on the development, range, and potential of the genre. Among the authors studied will be Wells, Stapleton, Heinlein, Asimov, Clarke, and Ballard.

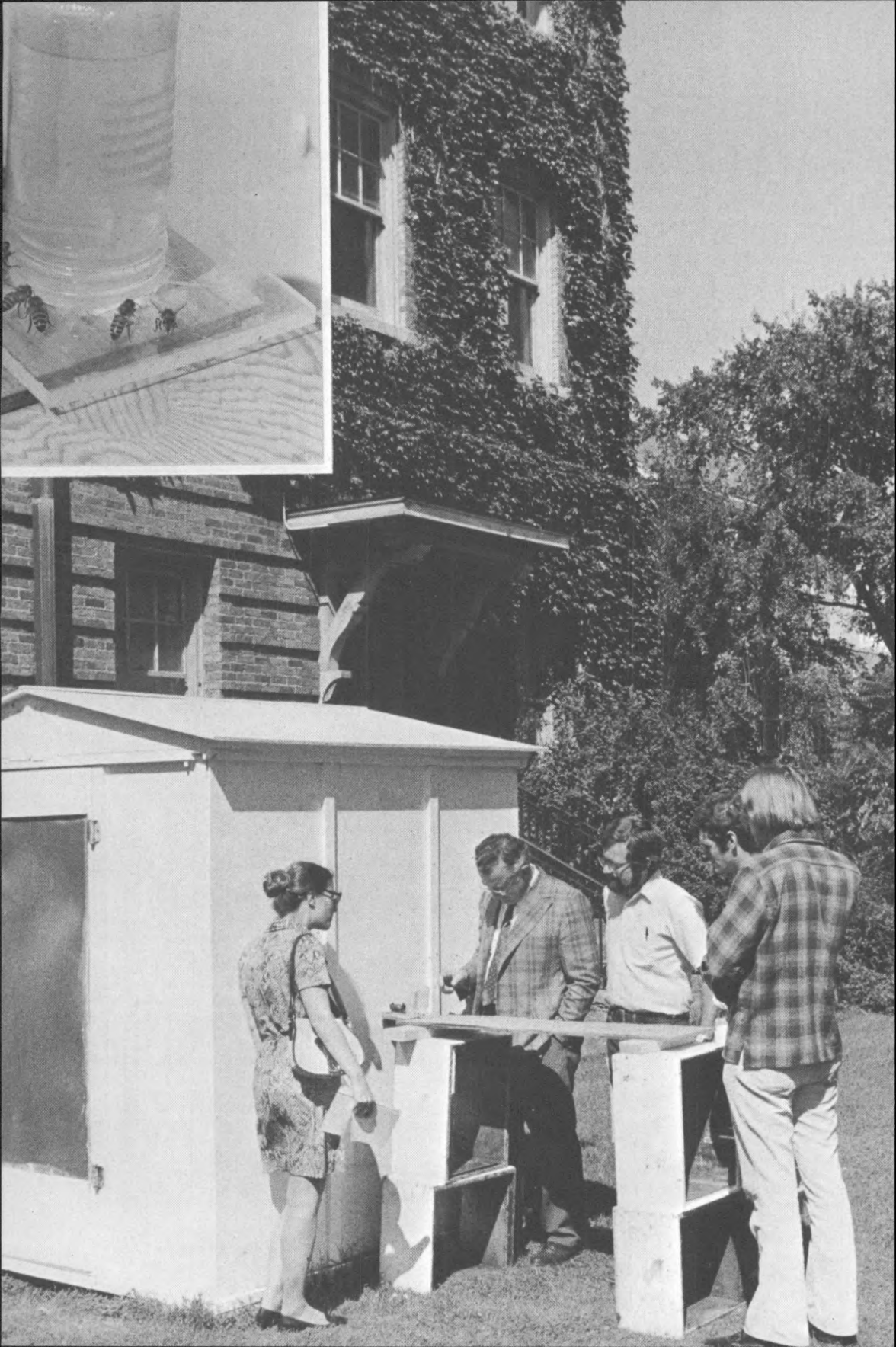
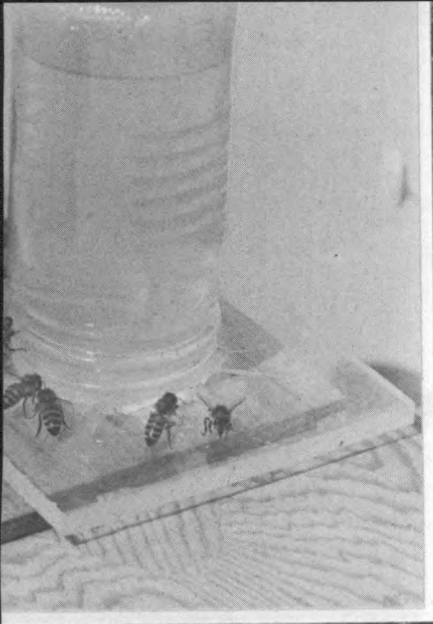
Engl. 368 Shakespeare (U,G). Four hours credit. M T W Th F 8–9:15. Goldwin Smith 246. H. S. McMillin. An introduction to the works of Shakespeare, based on a selection of plays representative of the stages of his artistic development and the range of his achievement.

Engl. 385 Advanced Fiction Workshop (U,G). Four hours credit. M T W Th 11–12:15 and conferences to be arranged. Goldwin Smith 160. E. Rosenberg. A workshop for writers of narrative—short stories, novels, and allied forms—who are in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference with the instructor. This course is a component of the Summer Arts Festival. See p. 59.

Engl. 387 Advanced Poetry Workshop (U,G). Four hours credit. M T W Th 3–4:15 and conferences to be arranged. Goldwin Smith 246. A workshop for poets in need of development beyond the exploratory stages. Participants will submit their work for analysis in group discussion and in conference with the instructor. This course is a component of the Summer Arts Festival. See p. 59.

Engl. 468 Contemporary American Poetry (U,G). Four hours credit. M T W Th F 9:30–10:45. Goldwin Smith 246. B. L. Hathaway. Emphasis on the works of Allen Ginsberg, Robert Lowell, Theodore Roethke, and James Wright; selective readings from the work of such poets as A.R. Ammons, Robert Bly, Randall Jarrell, W.S. Merwin, and Richard Wilbur.

Engl. 483 Seminar in the English Language (U,G). Four hours credit. M T W Th F 11–12:15. Goldwin Smith 236. R. T. Farrell. Principal topics for discussion and exploration will be



the history of English; language in general and the structure of modern English; the problems of teaching communication. Each student will be encouraged to concentrate on one or another of these topics.

Engl. 491 The Evolution of the Novel (U,G). Four hours credit. M T W Th F 3-4:15. Goldwin Smith 236. S. M. Parrish.

A study of the rise of the novel in the eighteenth century and the development of the novel form in selected works of the nineteenth century. Readings will include *Moll Flanders*, *Tom Jones*, *Clarissa*, *Tristram Shandy*, *Emma*, *Vanity Fair*, and *Jude the Obscure*. Some attention will be given to theoretical problems involved in the study of fiction.

Studies in the Literature of the Old Testament.

See Sem. 311, p. 42.

The Modern Experimental Theatre: Europe. See Th. Arts 331, p. 42.

The Modern Experimental Theatre: America. See Th. Arts 332, p. 44.

Entomology

Ent. 262 Biology of the Honey Bee (U,G).

One hour credit. Prerequisite: first-year biology course. Enrollment limited to 10 students. Fifteen laboratories, two per week, plus three evening sessions to be scheduled. Caldwell Hall 225 and Dyce Laboratory. R. Morse. A laboratory and field course in which the classical experiments on the vision, chemical senses, and language of the honey bee, as described by Von Frisch, are repeated. Laboratories include demonstration of the alarm odor, sex attractant, swarm orientation, and observation of the growth of a normal colony of bees both in an observation hive and a standard bee hive. In addition, the study of other social insects and their nests are presented, including wasps, bumblebees, and the semisocial solitary bees. Fee, \$6.

Geological Sciences

Geol. Sci. 101u Introductory Geological Science (U).

Three hours credit. June 27 to July 20. Lectures, M T W Th F 9:30-11:20. Kimball 212. Laboratory, M T W Th 1:30-4. Kimball 212.

An introduction to geological science designed to give general students a comprehensive understanding of earth materials, processes, features, and history, and an understanding of important developments in modern geology. Field trips during certain laboratory periods. Fee, \$10.

Geol. Sci. 102u Introductory Geological Science (U).

Three hours credit. July 23 to August 10. Prerequisite: Geological Science 101u or equivalent. Lectures, M T W Th F 9:30-11:20. Kimball 212. Laboratory, M T W Th 1:30-4. Kimball 212.

Continuation of Geological Science 101u, with emphasis on earth history, evolution of continents, oceans, mountain systems, and other features, and development of organic life. Field trips during certain laboratory periods. Fee, \$10.

Government

Gov. 101 American Government and Politics (U,G).

Three hours credit. M T W Th F 8-9:15. McGraw 145. M. Hanna.

Principles, problems, and processes in American political life.

Gov. 104 Comparative Government (U,G). Three hours credit. M T W Th F 9:30-10:45. McGraw 145. M. Hanna.

A comparative study of major contemporary political movements and of governmental institutions and processes in Great Britain, France, Germany, Russia, and in some of the newly emerging countries.

Gov. 203 Introduction to Political Theory (U,G).

Three hours credit. M T W Th F 11-12:15. McGraw 145. A survey of the development of Western political theory from Plato to the present. Readings from the work of the major theorists and an examination of the relevance of their ideas to contemporary politics will be stressed.

Gov. 206 Introduction to International Relations (U,G).

Three hours credit. M T W Th F 8-9:15. McGraw B-60. An introduction to the basic concepts and practice of international relations.

Gov. 308 Women and Power: The American Case (U,G). See Wom. St. 308, p. 44.

Gov. 313t The Nature, Functions, and Limits of Law (U,G) (Also Law 600t). See p. 24.

Gov. 327 The Supreme Court as a Democratic Institution (U,G). Four hours credit. M W 2-4. McGraw 145. D. Danelski.

An analysis of contemporary issues in civil liberties and civil rights, with emphasis on Supreme Court decisions. Cases will be analyzed in terms of democratic theory and the social and political context in which they arose.

Gov. 330 The Presidency, Congress, and the Supreme Court (U,G). Four hours credit. Prerequisite: Gov. 101 or equivalent. T Th 2-4. McGraw 145. D. Danelski.

An intensive study of three major governmental and political institutions and their relationship to each other.

Gov. 340t Government and Politics of Latin America (U,G). See p. 24.

Gov. 352 Revolutions and Revolutionary Theory (U,G).

Four hours credit. M T W Th F 8-9:15. McGraw 134. I. Kramnick. An examination of: (1) selected theories of revolution from the disciplines of political science, economics, sociology, and psychology; and (2) the historical examples of the "great" revolutions—the English, American, French, Russian, and Chinese—in light of these theories of revolution.

Gov. 382 American Foreign Policy (U,G). Four hours credit. M T W Th F 9:30-10:45. McGraw 134. M. Karns.

Discussion of the political, social, economic, and military factors which influence the making and execution of American foreign policy. Critical examination of the major components of foreign policy: national interests, objectives, and policy. To illustrate the importance of these components in relation to one another, their evolution during the twentieth century, and the determination of priorities by decision makers, consideration will be given to a number of major foreign policy actions.

Gov. 401 Liberalism, Conservatism and Socialism (U,G).

Four hours credit. M T W Th F 11-12:15. McGraw B-60. I. Kramnick.

This lecture and discussion course assumes that liberalism is the dominant ideology of the modern world. It will examine it in political, social, and economic terms; and will then consider the critics of liberalism—democratic, conservative, socialist, irrationalist, and fascist. The course will also deal with modern political science as a liberal discipline and with its non-liberal critics.

The Structure of American Political History.

See Hist. 374, p. 36.

Politics in Society. See Soc. 248, p. 42.

History

Hist. 106 Introduction to Western Civilization (U,G).

Three hours credit. M T W Th F 8-9:15. McGraw 366. L. P. Williams.

The development of Western Civilization from the time of the scientific revolution to the Cold War. Special attention will be given to the analysis of original documents and to the various interpretations offered by historians of these documents.

Hist. 367 Historical Studies in the Development of Modern Science (U,G).

Four hours credit. M T W Th F 9:30-10:45. McGraw 366. L. P. Williams.

Selected topics in the evolution of the physical and biological sciences in the eighteenth and nineteenth centuries.

Hist. 374 The Structure of American Political History (U,G).

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 162. J. Silbey.

A systematic examination of the course of American politics since 1865, focussing on the nature of leadership, decision making, popular, and legislative voting behavior; and the role of interest groups, political parties, and political elites in shaping our political history.

Hist. 375 The American Civil War and Reconstruction (U,G).

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 162. J. Silbey.

An analysis of the factors leading up to the breakup of the Union, the impact of the war in North and South, and the problems of restoration and reconstruction of the seceded states.

Hist. 433 The History of Classical Greece (U,G).

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 177. D. Kagan.

A study of the Greek experience with emphasis on the period from the emergence of Athenian democracy to the end of the independence of the Greek city states. Readings of ancient authors in translation as well as in modern scholarship.

Hist. 434 Historical Studies in the Origins of War (U,G).

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 177. D. Kagan.

This course examines the origins of two ancient and two modern wars, and makes an attempt at comparison. Readings of source materials in translation and in modern scholarship.

Technology and Society—A Historical Perspective.

See Mech. Eng. 3020, p. 33.

History of Industrial Relations in the United States.

See ILR 100, below.

Social and Cultural History of American Industrial Civilization.

See ILR 302, p. 37.

History of Mathematics.

See Math. 203, p. 37.

History of Art

Hist. of Art 215 Introduction to Art History: Art of the Classical World (U,G).

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 24. N. H. Ramage.

The sculpture, vase painting, and architecture of the ancient Greeks, from the Geometric period through the Hellenistic; and the art of the Romans, from the early Republic to the late Empire.

Hist. of Art 331 Art of the Medieval World (U,G).

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 24. R. G. Calkins.

A general survey of the significant monuments of medieval culture from the fourth to the fifteenth centuries in Western Europe. Works of art in a wide

variety of media will be discussed: mosaics, frescoes, illuminated manuscripts, monumental sculpture, ivory carving, metal work, and stained glass.

Hist. of Art 343 Art of the Italian Renaissance (U,G).

Four hours credit. M T W Th F 8-9:15. Goldwin Smith 24. R. G. Calkins.

A survey of the sculpture and painting in Italy of the fifteenth and early sixteenth centuries. Emphasis will be on the contributions of such major artists as Ghiberti, Donatello, Michelangelo, Leonardo da Vinci, and Raphael.

Hotel Administration

Typewriting

Hotel Adm. 610 Typewriting (U,G).

Two hours credit. Hotel elective. Enrollment limited to 35 students.

M T W Th F 11-11:50. Statler 337. E. C. Seaburg.

The personal needs of college students as well as the basic skills necessary for office jobs are met by this course in elementary typewriting. Instruction is given the typing of business letters, reports, and tabulations. No previous typing skill is needed. Those who have had typing before may enroll in the course to improve their speed and accuracy.

The Summer School of Hotel and Restaurant Administration is described on p. 52.

Human Development and Family Studies

HDFS 115 The Development of Human Behavior (U).

Three hours credit. Enrollment is limited to 80 students. M T W Th F 9:30-10:45. Martha Van

Rensselaer N-207.

Provides a systematic analysis of the forces affecting human development from infancy to adulthood. Attention is focused on the interplay of biological factors, interpersonal relationships, social structure, and cultural values in changing behavior and shaping the individual. Special emphasis is given to the social implications of existing knowledge.

HDFS 336u Methods and Materials Workshop for Teachers and Aides in Preschool Programs (U).

See p. 55.

Industrial and Labor Relations

ILR 100 History of Industrial Relations in the United States (U,G). (evening)

Three hours credit.

M W 7-10 p.m. Uris G-92. G. Korman.

A review of the development of industrial relations from colonial times to the present, with major emphasis on the last four decades. Aspects of the subject which will be explored include: the changing goals and structure of the organized labor movement, the rise of national unions, the evolution of personnel management and the growing role of government. The major purpose is to provide an understanding of the forces which have influenced the growth, structure, and behavior of unions, management, and government, and to develop therefrom a critical view of current practice.

ILR 250 Survey of Industrial and Labor

Relations (U,G). Three hours credit. M T W Th F 9:30-10:45. Ives 114.

A survey for students in other divisions of the University. An analysis of the major problems in industrial and labor relations; labor union history, organization and operation; labor market analysis and employment practices; industrial and labor legislation and social security; personnel management and human relations in industry; collective bargaining; mediation and

bitration; the rights and responsibilities of employers and employees; the major governmental agencies concerned with industrial and labor relations.

ILR 302 Social and Cultural History of American Industrial Civilization (U,G). (evening) Three hours credit. T Th 7–10 p.m. Uris G-92. G. Korman. This course examines the interaction between industrialization and the changing ideals of American nationalism since the Enlightenment. Special attention will be given to individualism, and such other elements of industrial life in the nineteenth and twentieth centuries as democracy, oligarchy, paternalism, fraternalism, pluralism, conflict, organization, professionalization, and quantification. Readings will be selected from original sources and scholarly accounts. ILR students may substitute this course for ILR 409.

ILR 510 Economic and Social Statistics (U,G). Three hours credit. No prerequisites. Lectures, T W Th 9:30–10:45. Ives 213. Laboratory, two sessions each week, to be arranged. I. Blumen. This nonmathematical course primarily for graduate students in the social studies without previous training in statistical method. Emphasis will be placed on discussion of technical aspects of statistical analysis and an initiative in selecting and applying statistical methods to research problems. The subjects ordinarily covered will include analysis of frequency distributions, regression and correlation analysis, and selected topics from the area of statistical inference.

Mathematics

Math. 107 Finite Mathematics with Applications (U). Three hours credit. Prerequisite: three years of high school mathematics. M T W Th F 9:30–10:45. White 328. J. Nerode.

This course is intended primarily for students in the more descriptive areas of biological and social sciences. Logic and set theory, probability, vectors and matrices, linear programming, functions and graphs.

Math. 111 Analytic Geometry and Calculus (U). Three hours credit. Prerequisite: three years of college preparatory mathematics including trigonometry. M T W Th F 8–9:15. White B-25. J. West. This plane analytic geometry, differentiation and integration of algebraic and trigonometric functions, applications.

Math. 112 Analytic Geometry and Calculus (U). Three hours credit. Prerequisite: Math. 111 or equivalent. M T W Th F 8–9:15. White 310. S. U. Chase. Differentiation and integration of elementary transcendental functions, techniques of integration, polar coordinates, partial differentiation, introduction to multiple integration, power series.

Math. 192 Calculus for Engineers (U). See p. 44.

Math. 200 Basic Concepts of Mathematics (U,G). Three hours credit. Prerequisite: a good knowledge of high school mathematics including trigonometry. M T W Th F 9:30–10:45. White 310. A. V. Jategaonkar. Discussion of basic ideas in mathematics drawn from algebra and topology. An example of the problems treated is the proof of the impossibility of trisecting an angle by ruler and compass. This course is very suitable for teachers, prospective teachers, and for high school students with a strong interest in mathematics.

Math. 203 History of Mathematics (U,G). Three hours credit. Prerequisite: Math. 111 or equivalent. M T W Th F 11–12:15. White B-15. R. A. Platek. A review of the history of mathematics from antiquity to the present. An attempt will be made to enter into

the atmosphere of each period in order to appreciate the meaning of mathematics for that era. A balance will be maintained between the mystical, philosophical view of mathematics, and the practical as exemplified in the arts, sciences, and technology of an era. A unifying theme will be the "golden mean" and its role from the construction of the pyramids to contemporary times.

Math. 213 Calculus (U). Three hours credit. Prerequisite: Math. 112 or equivalent. M T W Th F 8–9:15. White B-15. R. S. Hamilton. Vector analysis, line integrals, multiple integration, differential equations, complex numbers, series.

Math. 294 Engineering Mathematics (U). See p. 44.

Math. 331 Linear Algebra (U,G). Four hours credit. Prerequisite: Math. 112 or equivalent. M T W Th F 11–12:15. White B-25. D. A. Singer. Vectors, matrices, and linear transformations. Affine and Euclidean spaces. Transformation of matrices. Eigenvalues. Emphasis on applications. The additional credit is earned through homework and additional reading.

Math. 370 Elementary Statistics (U,G). Four hours credit. Prerequisite: Math. 112 or 108 or equivalent. M T W Th F 9:30–10:45. White B-29. P. J. Kahn. Topics in probability which are essential to an understanding of statistics; introduction to the principles underlying modern statistical inference and the rationale underlying choice of statistical methods in various situations. This is a terminal course, intended for those who will take no further work in this area. The additional credit is earned through homework and additional reading.

Introductory Engineering Probability. See OR 9160, p. 32.

Economic and Social Statistics. See ILR 510, above.

Microbiology

Micro. 290A General Microbiology, Lectures (U,G). Three hours credit. Prerequisites: a college course in general biology and in introductory chemistry. M T W Th F 11–12:15. Stocking 119. P. J. VanDemark and staff. A study of the basic principles and relationships in the field of microbiology, with fundamentals necessary to further work in the subject. Text: *Biology of Microorganisms*.

***Micro. 290B General Microbiology, Laboratory (U,G).** Three hours credit. Prerequisites: a college course in general biology and in introductory chemistry. M T W Th F 2–4:30. Stocking 301. P. J. VanDemark and staff. A study of the basic principles and techniques of laboratory practice of microbiology with fundamentals necessary to further work in the subject. Text: Seeley and VanDemark, *Microbes in Action*. Fee, \$25.

Department of Modern Languages and Linguistics

Secondary school students who have been admitted to a college for the coming academic year may take any language as undergraduate students.

An option is provided in French, German, etc. (where offered), as follows: The basic course sequence, 101 and 102, gives a thorough grounding in the language—listening, speaking, reading, and writing. It is conducted in small groups with native speakers as instructors. The elementary reading course

sequence, 131t, 132u and 133u, concentrates on the comprehension of written texts.

For the basic course, all students who have had no previous preparation in their elected language should register for course 101 or course 131t which is given in the three-week session (See p. 24). Students who have taken previous course work in their elected language will be placed in the appropriate course on the basis of College Entrance Examination Board (CEEB) achievement scores which they must provide before registration. Course choices which are available in the six-week session include 132u, 133u, 102, and 203, depending on level of achievement.

All of the following 203 courses provide intensive verbal exercise in a language, in small classes, with extensive reading, and are intended to produce a sharp improvement in verbal and reading skills. The courses are open to students who have reached approximately the 560 CEEB achievement level and have the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the courses.

Prospective teachers and teachers now in service will find the courses especially appropriate for their needs.

Non-Cornell students who cannot submit CEEB scores must supply transcripts showing amount of language work done and must report to the Department of Modern Languages and Linguistics for proper placement at the time of registration.

The 101 and 102 basic courses and the full course sequence, 131t, 132u and 133u, have four hours of classroom instruction per day plus independent study. For this reason students who register for these courses are not permitted to register for any other courses. Time and place of first class meeting for these courses will be listed in the *Supplementary Announcement*, which will be distributed on registration day.

Linguistics

For those interested in linguistics and language teaching, the Department of Modern Languages and Linguistics offers the opportunity to combine an introduction to linguistics with a language course intended to increase the student's speaking and reading skills to approximately the 700 CEEB achievement level.

Language teachers, students majoring in foreign languages, and M.A.T. candidates are referred to Linguistics 201 and the 203 course in French, German, Russian, and Spanish as listed on the following pages.

Ling. 201 Introduction to the Scientific Study of Language (U,G). Three hours credit. M T W Th F 12:30-1:45. Goldwin Smith 128. Staff.

An introductory survey course designed to acquaint the student with the nature of human language and with its systematic study. In this session, attention is also given to applied linguistics and other topics suitable for language teachers.

Ling. 214 Linguistics and the Teaching of English (U,G). Six hours credit. Prerequisite: education at the college level. M T W Th F 8-11. Goldwin Smith 128. C. E. Elliott.

An intensive course designed for those who wish to teach standard English to those whose native language is not English. While this is not a course designed to train researchers, ample time is given to the tenets and theory of linguistics. English is studied as a language in some detail, and techniques and methods of teaching English are examined.

Psycholinguistics. See Psych. 215, p. 41.

French

Fr. 101 French Basic Course I (U). Six hours credit. Students who have previously studied any French must take the qualifying examination before registering for this course. See additional information above. Twenty hours of instruction each week. J. S. Noblitt and staff.

Fr. 102 French Basic Course II (U). Six hours credit. Students who have not completed French 101 must take the qualifying examination before registering for this course. See above. Twenty hours of instruction per week. J. S. Noblitt and staff.

Fr. 131t French Elementary Reading Course I (U,G). See p. 24.

Fr. 132u French Elementary Reading Course I (U,G). Three hours credit. June 27 to July 20. Prerequisite: French 131t or equivalent. Twenty hours of instruction each week. J. S. Noblitt and staff. A continuation of French 131t.

Fr. 133u French Elementary Reading Course II (U,G). Three hours credit. July 23 to August 10. Prerequisite: French 132u or equivalent. Twenty hours of instruction each week. J. S. Noblitt and staff. A continuation of French 132u.

Fr. 203 Intermediate Conversation and Reading Course (U,G). Three hours credit. M T W Th F 9:30-10:45. Lectures, T Th 11-11:50. Ives 218. J. S. Noblitt and staff.

German

Germ. 101 German Basic Course I (U). Six hours credit. Students who have previously studied any German must take the qualifying examination before registering for this course. See additional information, above. Twenty hours of instruction each week. H. L. Kufner and staff.

Germ. 131t German Elementary Reading Course I (U,G). See p. 24.

Germ. 132u German Elementary Reading Course I (U,G). Three hours credit. June 27 to July 20. Prerequisite: German 131t or equivalent. Twenty hours of instruction each week. H. L. Kufner and staff. A continuation of German 131t.

Germ. 133u German Elementary Reading Course II (U,G). Three hours credit. July 23 to August 10. Prerequisite: German 132u or equivalent. Twenty hours of instruction each week. H. L. Kufner and staff. A continuation of German 132u.

Germ. 203 Intermediate Conversation and Reading Course (U,G). Three hours credit. M T W Th F 9:30-10:45. Lectures, T Th 11-11:50. Goldwin Smith 16. H. L. Kufner and staff.

See also Cornell Summer Program in Germany, p. 51.

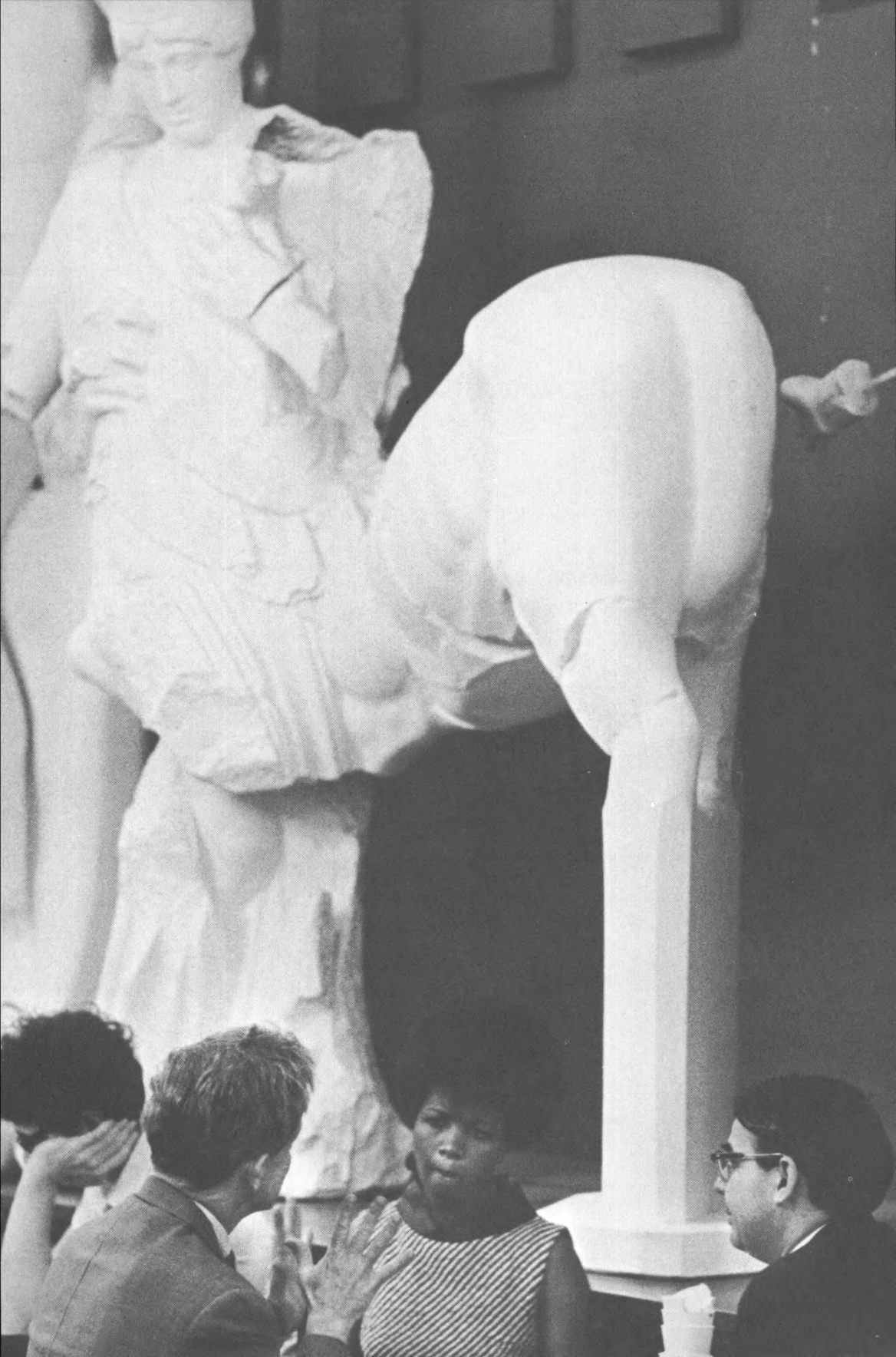
Russian

Russ. 101 Russian Basic Course I (U). Six hours credit. Students who have previously studied any Russian must take the qualifying examination before registering for this course. See additional information, above. Twenty hours of instruction per week. R. Brecht and staff.

Russ. 203 Intermediate Conversation and Reading Course (U,G). Three hours credit. M T W Th F 9:30-10:45. Lectures, T Th 11-11:50. Ives 216. R. Brecht and staff.

Spanish

Span. 101 Spanish Basic Course I (U). Six hours credit. Students who have previously studied any Span



must take the qualifying examination before registering for this course. See additional information on p. 38. Twenty hours of instruction per week. D. Stillman and staff.

Span. 131t Spanish Elementary Reading Course I (U,G). See p. 24.

Span. 132u Spanish Elementary Reading Course I (U,G). Three hours credit. *June 27 to July 20.* Prerequisite: Spanish 131t or equivalent. Twenty hours of instruction each week. D. Stillman and staff. A continuation of Spanish 131t.

Span. 133u Spanish Elementary Reading Course II (U,G). Three hours credit. *July 23 to August 10.* Prerequisite: Spanish 132u or equivalent. Twenty hours of instruction each week. D. Stillman and staff. A continuation of Spanish 132u.

Span. 203 Intermediate Conversation and Reading Course (U,G). Three hours credit. M T W Th F 9:30–10:45. Lectures, T Th 11–11:50. Goldwin Smith 277. D. Stillman and staff.

English as a Second Language. See p. 51.

Languages other than those offered by the Department of Modern Languages and Linguistics can be found on the following pages:

Greek and Latin, p. 28.

Hebrew, p. 42.

Chinese (Mandarin and Cantonese), p. 50.

Quechua, p. 55.

Music

Music 103 Main Streams of Popular Music (U,G). Three hours credit. M T W Th F 9:30–10:45. Lincoln B–22. T. A. Sokol.

A study of popular music: folk, church, dance, theatre, popular classics, etc., emphasizing the why's, where's, and when's in the formation of popular taste. Intended to place popular music in a chronological perspective.

Music 111 Summer Session Choir (U). One hour credit. Enrollment limited to those who are registered for another course or courses in the eight- or six-week summer session. Rehearsals, Tuesday evenings 7:15–9 p.m. Sunday mornings 9:30 a.m. Sage Chapel. D. R. M. Paterson. Membership in the choir is not limited to persons who register for the course.

Music 141 Rudiments of Music (U). Three hours credit. Some familiarity with music is desirable. M T W Th F 2–3:15. Lincoln B–22. L. J. Lehrman. Designed for students wishing an elementary, self-contained introduction to music theory. Fundamental musical techniques, theoretical concepts, and their application. Notation, pitch, meter; intervals, scales, triads; basic concepts of tonality; writing of melodies and simple contrapuntal exercises; ear training and dictation.

***Music 321 Individual Instruction in Piano (U).** Two hours credit. Consent of the instructor required. Two one-hour lessons weekly. Hours to be arranged. M. Bilson. Fee, \$50.

Music 464u Choral Style (U,G). Three hours credit. *July 8 to July 22.* Consent of the instructor required. Su M T W Th F 4–5:30; 7:30–9 p.m. S 1–3:30 p.m. Barnes Hall Auditorium. T. A. Sokol. Available to participants in the Choral Music Program. See Summer Arts Festival, p. 60.

Perception: Art and Music. See Psych. 305, p. 41.

Viola Da Gamba Summer Program. See p. 60.

Natural Resources

Nat. Res. 222 Environmental Conservation (U,G). Three hours credit. M T W Th F 9:30–10:45. Fernow 30. R. J. McNeill.

Man, natural resources, and the environment. Man's use and misuse of the natural components of the environment. Current resource use problems such as air and water pollution, radiation, garbage and waste, and the population problem are studied using the case history approach. Resource use policies are related to social problems, and an attempt is made to introduce the concept of a conservation ethic.

Nat. Res. 630 Aquatic Field Ecology (G). See p. 48.

Natural Resource Potential for Food Production in the Tropics. See Agron. 411, p. 26.

Ornithology

See Bio. Sci. 472, p. 28, and Ornithology Field Seminars, p. 56.

Philosophy

Phil. 101 Introduction to Philosophy (U). Three hours credit. M T W Th F 12:30–1:45. Goldwin Smith 2. B. Goldberg.

The topics will include: skepticism, the existence of God and the problem of evil; theories of punishment.

Phil. 233 Philosophy of Mind (U,G). Four hours credit. M T W Th F 2–3:15. Goldwin Smith 221. B. Goldberg.

The course will focus on theories concerning the relationship between the mind and the body. Several approaches will be examined, including materialism, behaviorism, and various forms of psychophysical dualism. Other topics to be discussed are: causation and human action; the freedom of the will; the role of philosophical theories in psychology.

Physics

***Physics 101u General Physics (U).** See p. 44.

***Physics 102u General Physics (U).** See p. 45.

***Physics 112 Introductory Analytical Physics I (U).** Four hours credit. Prerequisites: one year of secondary school physics and Math. 111 or 191, or consent of instructor. Lectures and discussion, M T W Th F 11–12:15. Rockefeller B. Laboratory, T Th 2–5. Rockefeller 252.

The mechanics of particles: kinematics, dynamics, conservation of linear momentum, central-force fields, conservation of energy, periodic motion. The mechanics of many-particle systems: center of mass, angular momentum of a rigid body, simple rotational mechanics of a rigid body. Introduction to special relativity: invariance of velocity of light, Lorentz transformation, relativistic momentum and energy. At the level of *Fundamentals of Physics* by Resnick and Halliday. Fee, \$50.

Physics 213 Introductory Analytical Physics II: Electricity and Magnetism (U). Three hours credit. Primarily for students of engineering and for prospective majors in physics. Prerequisites: Physics 112 or 207 and Math. 192 or 112 or equivalent. Lectures and discussion, M T W Th F 9:30–10:45. Rockefeller D. Electrostatics, behavior of matter in electric fields, magnetic fields, Faraday's Law, electromagnetic

oscillations and waves, magnetism and relativity. At the level of *Physics, Part II* (1966) by Resnick and Halliday.

Physics 213L Laboratory to Accompany Physics 213 (U). One hour credit. Prerequisite: coregistration in Physics 213 or consent of instructor. T Th 2-5. Rockefeller 30. Experiments in electricity and magnetism. Fee, \$5.

Physics 214 Introductory Analytical Physics III: Optics, Waves, and Particles (U). Three hours credit. Primarily for students of engineering and prospective majors in physics. Prerequisites: Physics 213 and Math. 293 or 221 or equivalent. Lectures and discussion, M T W Th F 11-12:15. Rockefeller D. Wave phenomena; electromagnetic waves; physical and geometrical optics; quantum effects, matter waves; uncertainty principle; introduction to wave mechanics and elementary applications. At the level of *Fundamentals of Optics and Modern Physics* by H. D. Young.

Physics 214L Laboratory to Accompany Physics 214 (U). One hour credit. Prerequisite: coregistration in Physics 214 or consent of instructor. T Th 2-5. Rockefeller 30. Experiments in optics and contemporary physics. Fee, \$5.

Physics 490 Independent Study in Physics: Advanced Experimental Physics (U). Three hours credit. Prerequisites: Physics 216 or 310 or 360 or 400, 303 or 318, and 322, or 325, or consent of the instructor. Individual project work carried out in conjunction with the Physics 510 Laboratory; see topics available in Physics 510, p. 45. Fee, \$15.

Physics 500 Informal Graduate Laboratory (G). One or two hours credit. Prerequisites: Physics 216, 310 or 360, and a junior-senior course in contemporary physics (e.g., Physics 315), or consent of the instructor. Laboratory open M T W Th F 2-5. Clark 308. This laboratory is associated with the Physics 510 Laboratory; see topics in Physics 510, p. 45. Fee, \$5 per credit hour. Will also be given in the eight-week session.

Physics 510 Advanced Experimental Physics (G). See p. 45.

Plant Pathology

See p. 48.

Psychology

Psych. 101 Introduction to Psychology: Bases of Human Behavior (U,G). Three hours credit. M T W Th F 11-12:15. Uris Auditorium. N. E. Bingham. Emphasizes the study of human behavior from the standpoint of the basic processes. Topics include brain functioning, dreaming, intelligence, psychological testing, perception, learning, motivation, emotion, abnormal behavior, and psychiatry. The course centers upon contemporary problems confronting psychologists and is supported by discussion seminars.

See also HDFS 115, *Introduction to Psychology: The Development of Human Behavior*, p. 36; and Soc. 101, *Man and Society*, p. 42.

Psych. 102 Introduction to Psychology: Personality and Social Behavior (U,G). Three hours credit. M T W Th F 9:30-10:45. Ives 110. S. C. Jones. An examination of personality and social influences on the individual's adjustment to himself and his environment. Both classic and contemporary viewpoints will be considered and evaluated in the light of empirical evidence.

Psych. 210 Memory and Attention (U,G). Three hours credit. M T W Th F 8-9:15. Uris 204. D. C. Littman. A study of the relations between the constructive processes of attention and memory; emphasizing recent studies of attentive and preattentive processes in vision, of selective listening, of short-term memory and recoding, and of long-term memory and imagery.

Psych. 215 Psycholinguistics (U,G). Three hours credit. Prerequisite: an introductory course in psychology. M T W Th F 11-12:15. Uris 204. P. A. Carlson. This course is a general introduction to the use of language in human communication. Questions include: How do children learn their native language? How do speakers produce and understand sentences? Is animal communication related to human language? What is the relation between language and thinking? Does language relate to other processes, such as perception and memory? There will be many demonstrations as well as class discussions.

Psych. 232 The Psychology of Woman (U,G) (Also Wom. St. 232). Three hours credit. Enrollment limited to 30 students. M T W Th F 2-3:15. Uris 260. S. A. Graetz. A discussion of women and their relationship to the development of psychological concepts. The failure of traditional psychology to offer an adequate basis for the understanding of women will be addressed in an attempt to articulate more valid bases for a psychology of women. Works of Sigmund Freud, Karen Horney, Erik Erikson, Wolfgang Lederer, Friedrich Engels, Margaret Mead, as well as contemporary feminist writers, will be examined critically. The course will include discussion sections in which students will have a chance to relate course material to their own life experiences.

Psych. 281 Interpersonal Relations and Small Groups (U,G). See Soc. 281, p. 42.

Psych. 305 Perception (U,G). Three hours credit. Prerequisite: one course in psychology. M T W Th F 12:30-1:45. Uris 260. P. I. Kaushall and R. C. Becklen. The aim of this course is to present the basic facts of visual perception, concerning the question of why we see the world as we do. Contributions of thinkers in the fields of psychology, philosophy, and art will be discussed and evaluated, and the implications of art and language for theories of perception will also be considered.

Psych. 309 Development of Perception and Attention (U,G). Three hours credit. Prerequisite: one course in psychology. M T W Th F 12:30-1:45. Uris 204. N. L. Rader and E. E. Garber. Selection and processing of stimulus information—objects, space, events, and coded stimuli—in evolution and in human development; theories of perceptual learning.

Psych. 313 Cognitive Processes (U,G). Three hours credit. Prerequisite: one course in psychology. M T W Th F 9:30-10:45. Uris 204. B. S. Long. The course emphasizes human thought processes. It covers selected problems in language and thinking, problem solving and concept formation, attention and memory. There will be numerous classroom demonstrations to supplement the discussions.

Psych. 325 Clinical Psychology: Behavioristic and Humanistic Approaches to Personality Change and Therapy (U,G). Three hours credit. Prerequisite: one course in psychology. M T W Th F 9:30-10:45. Uris G-92. (Also offered in the three-week session.) P. J. Poppen and A. Wandersman. A systematic discussion of the humanistic and behavioristic approaches to personality change and therapy. Students will read writings on the theory of personality change by such persons as Jourard, Wolpe, Bandura, Rogers, Laing, and Skinner. In addition, research will be reviewed to determine the relevant personality

dynamics and the effectiveness of the therapies growing out of the approaches. Discussion of such issues as the evaluation of the assumptions of the nature of man and mental illness implicit in the theories, and the applicability of the therapies for various behavioral emotional problems and cultural settings.

Psych. 381 Social Psychology (U,G) (Also Soc. 381). Four hours credit. Prerequisite: one course in psychology. M T W Th F 11–12:15. Uris 260. S. C. Jones. Analysis of the history, concepts, methods, and theories used to describe and conceptualize the ways in which people react to one another in social settings and in the laboratory. The topics for investigation in lectures and reading will include socialization, attitude change, communication, interpersonal influence, impression formation, leadership, and propaganda.

Psych. 385 Theories of Personality (U,G). Three hours credit. Prerequisite: one course in psychology. M T W Th F 8–9:15. Uris 260. D. Kleiber. A critical survey of the concept of personality in psychology and other social sciences. Traditional theorists such as Freud and Jung will be discussed, but the emphasis will be on more recent perspectives. A move toward examining issues in personality will be made in an attempt to integrate theoretical perspectives and empirical evidence and to draw implications for social policy. Students will be encouraged to build and defend their own theories.

Psych. 480 Attitude Theory (U,G) (Also Soc. 480). Four hours credit. Prerequisite: a course in social psychology. M W F 2–4. Uris 204. L. Meltzer. Not a survey. A single family of approaches, known collectively as cognitive consistency theory, will be studied in depth. Lectures and discussions will closely parallel readings from classic sources, including: Fritz Heider, *The Psychology of Interpersonal Relations*; Leon Festinger, *A Theory of Cognitive Dissonance*; Theodore Newcomb, *The Acquaintance Process*; Milton Rokeach, *Beliefs, Attitudes, and Values*; Milton Rosenberg, *Attitude Organization and Change*; and Shel Feldman, *Cognitive Consistency*.

Psychology of Adolescence. See Ed. 417, p. 30.

Educational Psychology. See Ed. 511, p. 30.

Romance Studies

Span. 309 Women in Spanish American Literature (U,G). See Wom. St. 309, p. 44.

Semitic Languages and Literatures

Sem. 105u Elementary Classical Hebrew (U,G). Three hours credit. June 27 to July 20. Must be taken with Sem. 106u. M T W Th F 8–9:15 and 11–12:15. Rockefeller 105. A. D. York. Basic elements of Biblical Hebrew grammar.

Sem. 106u Elementary Classical Hebrew (U,G). Three hours credit. July 23 to August 10. Open only to students registered in Sem. 105u. Same time schedule as Sem. 105u. A. D. York. Reading of selected portions of the Hebrew Bible.

Sem. 305 Studies in Christian Origins (U,G). Four hours credit. M T W Th F 9:30–10:45. Uris G–8. C. M. Carmichael. The religious and moral ideas, customs, and conventions which appear in the New Testament will be traced in Old Testament and other Jewish writings.

Sem. 311 Studies in the Literature of the Old Testament (U,G). Four hours credit. M T W Th F 8–9:15. Uris G–14. C. M. Carmichael.

A critical appreciation of material (in translation) from the following: Genesis, Exodus, Deuteronomy, Ruth, Samuel, Esther, Job, Proverbs, Ecclesiastes, and Jonah.

Sociology

Soc. 101 Man and Society (U). Three hours credit. M T W Th F 8–9:15. Ives 110.

An introduction to the principal concepts and perspectives of contemporary sociology. The course is organized around illustrative sociological research and offers experience with the data and techniques of the discipline. Among topics to be considered are family, deviance, urbanization, race and poverty, population, health and medicine, socialization and social interaction.

Soc. 248 Politics in Society (U,G). Three hours credit. M T W Th F 11–12:15. Uris G–92.

An examination of the relations between the social and political structure with particular emphasis upon the U.S. Topics such as party systems, voting behavior, social movements, and power distribution will be discussed in this context.

Soc. 281 Interpersonal Relations and Small Groups (U,G) (Also Psych. 281). Three hours credit. Prerequisite: a course in psychology or sociology. M T W Th F 9:30–10:45. Uris G–94. D. P. Hayes.

The presentation and development of selected theories offered to account for the dynamics of interpersonal relationships and the social structures which emerge from and condition, these relationships. Emphasis will be upon social psychological processes in small groups such as athletic teams, committees, fraternities, and engaged couples. These perspectives are compared and evaluated.

Soc. 343t The Family (U,G). See p. 24.

Soc. 381 Social Psychology (U,G). See Psych. 381, above.

Soc. 448 Social Psychiatry and Community Health (U,G). Four hours credit. Prerequisite: two courses in sociology or psychology. T Th 2–5. Uris G–14. T. Wan. Basic theory and practice in social psychiatry and community psychiatry. Social etiology and distribution of psychiatric disorders, cross-culturally, will be studied from an interdisciplinary point of view. The scope of mental health service responsibility, types of social institutions active in the prevention of mental diseases, and the treatment and care of the mentally ill will be discussed. Evaluative research on mental hygiene programs will be introduced. Field trips will be included to allow students observe typical operating agencies in the community.

Soc. 480 Attitude Theory (U,G). See Psych. 480, above.

The Socialization of Adolescent Girls. See Wom. St. 298, p. 44.

Theatre Arts

Th. Arts 287 Beginning Acting (U,G). Three hours credit. M T W Th F 11–12:15. Lincoln 304. Staff. Introduction to the problems and basic techniques of contemporary acting. Practice in creative exercises, pantomime, improvisation, and physical and imaginative script interpretation.

Th. Arts 300 Directed Studies (U,G). Credit and hours to be arranged. Individual study of special topics to be arranged with departmental member directing the study.

Th. Arts 331 The Modern Experimental Theatre: Europe (U,G). Four hours credit. M T W Th F 11–12:15. Lincoln 305. M. A. Carlson. A study of such important modern trends in playwriting



44 Eight-Week Session

the political or engaged theatre of Brecht, the absurdist theatre of Ionesco and Genet, the documentary theatre of Weiss, and the continuing tradition of realism. Attention will also be given to the most significant modern experiments in production techniques as they affect the work of the playwright.

Th. Arts 332 The Modern Experimental Theatre: America (U,G). Four hours credit. M T W Th F 9:30-10:45. Lincoln 302. L. I. Eilenberg.

A study of twentieth-century American plays and productions which self-consciously set themselves in opposition to mainstream theatrical traditions. A consideration of off-Broadway as a separate and self-contained locus for the American drama. Readings from representative dramatists, including works by O'Neill, Cummings, Eliot, Lawson, Gelber, Brown, Ribman, Lowell, Shepard, van Italie, Bullins, and Drexler.

***Th. Arts 374 American Film Comedy 1914-1940 (U,G).** Three hours credit. M T Th 2-4:30. Lincoln 204. D. Fredericksen.

A study of the nature of American film comedy in the silent and sound periods. Particular attention will be given to Sennett, Chaplin, Keaton, Laurel and Hardy, the Marx Brothers, Lubitsch, and McCarey. Fee, \$10.

Shakespeare. See Engl. 368, p. 33.

Women in Elizabethan and Jacobean Drama. See Wom. St. 304, below.

Cornell Summer Theatre. See Summer Arts Festival, p. 61.

Typewriting

See Hotel Admin. 610, p. 36.

Urban Planning and Development

See p. 57.

Women's Studies

The Women's Studies Program of the College of Arts and Sciences has three aims: (1) to broaden teaching and research about women, drawing upon the resources of many related disciplines, (2) to expand research about the male/female dimension, and (3) to cooperate with public service activities of the University.

Wom. St. 232 The Psychology of Woman (U,G). See Psych. 232, p. 41.

Wom. St. 298 The Socialization of Adolescent Girls (U,G). Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 248. C. Ireson.

An analysis of the processes of socialization to the various female roles experienced by girls in American society. Cultural, social-structural, and psychological concomitants of these processes will be discussed.

Wom. St. 301 Women and Autobiographical Writing (U,G) (Also Engl. 301). Three hours credit. M T W Th F 11-12:15. Goldwin Smith 248. P. Latham.

A study of "literary" writing (poetry, journals, memoirs) and "confessional" writing (collections of letters, selections from the literature of the women's movement). Students will write papers using the readings as structural models but their own experience as content.

Wom. St. 304 Women in Elizabethan and Jacobean Drama (U,G) (Also Engl. 304). Three hours credit. M T W Th F 3:30-4:45. Goldwin Smith 248. M. O. Rush. Analysis of a group of plays by Shakespeare and his contemporaries in terms of dramatists' uses of women characters both as criticisms of and responses to the values of their culture.

Wom. St. 308 Women and Power: The American Case (U,G) (Also Gov. 308). Three hours credit. M T W Th 8-9:15. Goldwin Smith 248. S. Leader. An examination of institutional and attitudinal factors which result in American women's status as a powerless majority. Feminism as a political movement is examined in terms of ideology, organizational patterns, methods and patterns of recruitment and leadership, goal formation, and goal achievement.

Wom. St. 309 Women in Spanish American Literature (U,G) (Also Span. 309). Three hours credit. M T W Th 2:30-3:15. Goldwin Smith 248. R. Stillman. An analysis of the attitudes toward women in representative works and study of the society that give rise to these attitudes and works.

Eight-Week Session

June 18-August 10

Students admitted to this session may also take courses in the six-week session and, in some cases, they may take a course in the three-week session. In addition, they may elect one or more courses from among the Special Programs and the Summer Arts Festival (pp. 47-61) if granted permission by the program director and if there is no conflict in the time schedule of classes. Tuition for such courses is often not at the same rate as that charged for the regular sessions. See Special Program Summer Arts Festival courses for rates that apply to them.

In all cases, departments offering courses in this session also offer courses in the six-week session (See pp. 26-4).

An asterisk (*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the course description. Course fees are *non-refundable* and will not be prorated if a student cancels a course or withdraws.

Engineering

Chem. Eng. 5111 Mass and Energy Balances (U,G). See p. 32.

Mathematics

Math. 192 Calculus for Engineers (U). Four hours credit. *June 18 to August 10.* Prerequisite: Math. 191 or equivalent. M T W Th F 8-8:50. White B-29. R. Livesay. Transcendental functions, techniques of integration and multiple integrals, vector calculus, analytic geometry in space, partial differentiation, applications. Text: Thomas *Calculus and Analytic Geometry*, chapters 7-15.

Math. 294 Engineering Mathematics (U). Three hours credit. *June 18 to August 10.* Prerequisite: Math. 293 or equivalent. M T W Th F 8-8:50. Hollister 110. Linear differential equations, quadratic forms and eigenvalues, differential vector calculus, applications. T. Block, Cranch, Hilton, Walker, *Engineering Mathematics* vol. 2.

Physics

***Physics 101u General Physics (U).** Four hours credit. *June 18 to July 13.* Prerequisite: three years of second school mathematics, including some trigonometry. An audio-tutorial, self-paced format of instruction will be used.

study and laboratory work, allowing students to work learning center at hours of their own choice, but stays under the supervision of a physics instructor. Weekly group meeting, M 9:30–10:45. Rockefeller 350. Basic principles of physics, treated quantitatively but without calculus. Major topics are the particle structure of matter; kinematics; forces and fields (including electrical fields); momentum, angular momentum, and energy (including nuclear energy); wave motion; and relativity. Text: Tilly and Thumm, *College Physics—A Text with Applications to the Life Sciences*, 1971, supplemented extensively with course notes. Fee, \$5.

Physics 102u General Physics (U). Four hours credit. June 16 to August 10. Prerequisite: Physics 101u, 112, or 113. The format will be the same for Physics 101u described above. Weekly group meeting, M 9:30–10:45. Continuation of Physics 101u. Students who complete work for 101u before July 13 may begin 102u immediately. Rockefeller 350.

Electrical and optical phenomena, quantum physics, and thermal physics. Laboratory emphasis is on instruments,

measurement, and interpretation of data. Text: as listed above for Physics 101u. Fee, \$5.

***Physics 500 Informal Graduate Laboratory (G).** One or two hours credit. June 18 to August 10. Prerequisites: Physics 216, 310 or 360, and a junior-senior course in contemporary physics (e.g., Physics 315) or consent of the instructor. Laboratory open M T W Th F 2–5. Clark 304. This laboratory is associated with the Physics 510 laboratory. See topics listed under Physics 510. Physics 500 can also be taken in the six-week session, see p. 41. Fee, \$5 per credit hour.

***Physics 510 Advanced Experimental Physics (G).** Three hours credit. June 18 to August 10. Prerequisites: Physics 410, or 500, and 443, or consent of the instructor. M T W Th F 2–5. Clark 308.

About seventy different experiments are available among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, X rays, crystal structure, solid state, cosmic rays, and nuclear physics. The student is expected to perform about five or six experiments, selected to meet his individual needs. Stress is laid on independent work. Fee, \$15.



Special Programs

Special Programs of the Division of Summer Session are designed, in most cases, to serve a specific clientele in a particular discipline. Special Programs are scheduled for periods not consistent with the regular summer sessions offerings; and tuition rates, application procedures, registration process, and so forth may also vary from the regular summer sessions procedures. The variations are noted in the descriptions of each program.

Additional Special Programs may be added before the sessions begin. A listing of these additions may be obtained from the Dean of the Summer Session, 105 Day Hall, Cornell University, Ithaca, New York 14850.

In certain programs it is possible for a student registered in a regular summer session to also take a course in a Special Program. In cases of this nature, the rate specified for the Special Program will apply to the course selected in that program, and the \$5 per week General Fee will be charged for any additional weeks not covered by the regular summer sessions registration.

A student admitted to a Special Program may also take a course from the regular summer sessions listings to complete his summer studies. In cases of this nature, the student will pay the tuition rate of \$80 per credit hour for the regular summer sessions course and the \$5 per week General Fee for any weeks not already covered by the Special Program registration. (See Tuition and Fees, pp. 10-12). Registration in a course in a Special Program must have the approval of the director of that program.

An asterisk (*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the course description. Course fees are nonrefundable and will not be prorated if a student cancels a course or withdraws.

Instructions for requesting further information and application forms accompany the descriptions of the following Special Programs. The application form in the back of this *Announcement* is not for Special Programs.

Advanced Placement Program for Secondary School Juniors

June 27-August 10

The Advanced Placement Program for Secondary School Juniors, open only to academically talented students who

will have completed the eleventh year in secondary school by June 1973, is offered to enable college-bound students to achieve advanced placement in college.

The program offers college-level courses in African studies, anthropology, astronomy, biological sciences, chemistry, classical Greek and Latin, comparative literature, computer science, economics, English, geological sciences, government, history, history of art, human development, industrial and labor relations, mathematics, French, German, Russian, Spanish, linguistics, music, natural resources, philosophy, physics, psychology, semitics, and sociology. Students may earn a minimum of six hours credit to be recorded with the registrar of Cornell University for subsequent transfer as desired. The program requires full-time study for the six-week session.

Special provisions are made for housing, dining, and counseling services. The usual health services and all extracurricular activities provided in the Division of Summer Session are made available. The total charge to each student is \$680. This covers all costs except textbooks and personal expenses.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1973 program. Those interested in the 1974 program may receive further information by writing to the Director, Advanced Placement Program for Secondary School Juniors, 105 Day Hall, Cornell University, Ithaca, New York 14850.

Agricultural and Occupational Education Summer Program

July 9-August 3

One-week and three-week unit courses in technical agriculture and education are available to teachers of agriculture and other professional workers in agricultural and occupational education. The unit courses provide an opportunity for professional improvement without the need for extended leaves of absence from employment.

Graduate credit earned may be applied toward the Cornell residence requirement for the professional graduate degrees, but not for other Cornell graduate degrees. Students working toward graduate degrees should register with both the Division of Summer Session and the Graduate School (See pp. 13-14). The unit courses may also be applied toward certification requirements.

Final registration for the one-week courses will take place on July 9, 1973, at a time and place to be announced. Final registration for the three-week courses will take place on July 16, 1973.

For further information and application forms, address William E. Drake, Agricultural and Occupational Education Summer Program, 204 Stone Hall, Cornell University, Ithaca, New York 14850.

An outline of the course offerings follows.

One-Week Courses

*Agr. Engr. 402u Fundamentals and Maintenance of Tractor Hydraulic Systems (U,G).

One hour credit. July 9 to July 13. Enrollment limited to 15 students. M T W Th F 9–11:50 and M T W Th 1–4. Riley Robb 60. E. W. Foss, F. G. Lechner, and G. E. Rehkugler. Instruction in basic principles of hydraulics together with laboratory practice in general maintenance. It is planned to make use of tractor dealership training facilities for a portion of the laboratory experience. The course is designed primarily for agricultural mechanization teachers in occupational education. Fee, \$10.

*Plant Path. 413u Diseases and Pests of Woody Ornamental Plants (U,G).

One hour credit. July 9 to July 13. M T W Th F 9–12 and 1–4. Plant Science 141. W. T. Johnson, J. L. Saunders, and W. A. Sinclair. Field trips and lectures to identify the common New York insects and diseases that affect ornamental trees and shrubs. Some aspects of control will be covered. Fee, \$15.

Three-Week Courses

*Agr. Engr. 422u Controlling Water Pollution (U,G).

Two hours credit. July 16 to August 3. M T W Th F 8–9:50. Laboratory and field trips to be arranged. Riley Robb 15. D. C. Ludington. A course dealing with the impairment of our water resources by the wastes of man and his activities. Emphasis will be on waste from urban and rural areas. The origin of pollutants, their effect on surface and ground water, and the processes and techniques available to control water pollution will be included. Individual problem areas related to water pollution and unique to teaching situations will be considered. Fee, \$5.

*Agr. Engr. 499u Small Gasoline Engine Maintenance and Repair (U,G).

Two hours credit. July 16 to August 3. M T W Th F 10–11:50 and M T Th 1–4. Riley Robb 60. F. G. Lechner. The course includes instruments and laboratory practice in preventive maintenance and overhaul of small gasoline engines. Each student will be expected to bring to class one or two engines that need overhaul and to purchase the parts needed. The course is designed primarily for occupational teachers, but any interested student may enroll. Fee, \$5.

*An. Sci. 455u Dairy Cattle Nutrition (U,G).

Two hours credit. July 16 to August 3. M W F 10–11:50 and T Th 1–3:30. Morrison 342. C. E. Coppock. This course is designed to provide in-depth training which relates to the nutrition of the dairy cow. Areas of emphasis will include the anatomy and physiology of the digestive tract, biochemical relationships important in ruminant nutrition, metabolic diseases, and systems of feed analysis and feed formulation. The most recent research findings will be related to practical problems faced by educators in agriculture. Fee, \$10.

Ed. 433u Special Problems—Organizing and Conducting Adult Occupational Education Programs (U,G).

Two hours credit. July 16 to August 3. M T W Th F 8–9:50. Warren 232. H. R. Cushman.

This course will examine procedural models for organizing and conducting adult occupational education programs. Emphasis will be given to procedures for systematic planning and methods for conducting adult education programs. The course is designed for teachers of occupational education contemplating offerings to adult teachers, and directors of adult and continuing education.

Ed. 499u Informal Study in Education (G). Credit hours as arranged. July 16 to August 3. Consent of instructor required. Staff.

Ed. 500u Special Studies in Education (G). Credit hours as arranged. July 16 to August 3. Consent of instructor required. Staff. Students working on theses or other research projects may register for this course.

Ed. 630u Seminar in Occupational Education (G).

Two hours credit. July 16 to August 3. M T W Th F 10–11:50. Warren 232. Staff. The seminar will be centered on current problems affecting occupational education in the secondary schools. Consideration will be given to such areas as curricula, youth organizations, directed work experience and other problems as identified by the students and instructors.

Aquatic Field Ecology Program

June 4–July 6

Topic: Production and energy flow in an aquatic food chain. An experience in team research designed for advanced students and teachers desiring to assess quantitative aspects of ecosystem studies. The core of this course is an intensive five-week field study of a phytoplankton-zooplankton-fish food chain. Parameters needed to estimate energy flow through the system will be measured in the field and laboratory. Predictive equations for fundamental controlling factors will be derived and the end product of the course will be a mathematical model of the system.

Students will be housed at Shackleton's Point, the Cornell University Field Station 15 miles northeast of Syracuse, New York. This 400-acre station bordering Oneida Lake is well equipped for aquatic studies.

Costs total \$550 which covers tuition, board, room, and other course related expenses. Credit will be earned in Nat. Res. 630. The deadline for submitting applications is April 15.

For information and application forms write Dr. John Forney, Director, Aquatic Field Ecology Program, 118 Fernow Hall, Cornell University, Ithaca, New York 14850.

Course

Nat. Res. 630 Aquatic Field Ecology (G).

Five hours credit. June 4 to July 6. Enrollment limited to 12 students. S/U grades. No formal examinations are given.

Archaeological Field Program

June 10–August 20

The history of architecture courses will be supplemented with an opportunity for students to participate in excavations in Greece and Turkey. The purpose of the program is to give students an opportunity to sur-

interpret, and draw the remains of ancient buildings, collaborating with professional archaeologists as members of a field team. Depending on the response from directors of several expeditions, six to eight students will be placed.

The program in 1973 is limited to second-, third-, and fourth-year students in the College of Architecture at Cornell and to qualified graduate students. Initial training will be given in the spring at Cornell. Depending on the success of the first year, an intensive summer training course may be initiated on a site in Turkey in 1974. Students from schools of architecture or graduate history students in schools other than Cornell are invited to inquire concerning the 1974 summer program.

Six to eight hours credit in Architecture 484 may be earned, according to the demands and duration of the individual excavation. Room and board expenses should be provided by the excavation sponsors. Tuition and other costs to be determined.

Students will be asked to commit themselves to spending two consecutive summers working on an excavation. The first season will be primarily a training experience. In their second season, they will be able to produce more professional work for the excavation.

The program will be directed by Willson Cummer, assistant professor of architecture and a classical archaeologist working on excavations at Gordion, Turkey, and on the island of Kea, Greece. For further information and application write to Director, Archaeological Field Program, West Sibley Hall, Cornell University, Ithaca, New York 14850.

Course

Arch. 484 Practice in Architectural Aspects of Archaeological Field Work (U,G). Six to eight hours credit. *June 10 to August 20.* W. W. Cummer.

Introductory Program in Architecture

June 27–July 31

The program is offered to high school and college students who are interested in entering architecture or related environmental design professions. Previous drawing experience is not required.

The program consists of two concurrent sequences. The first comprises an orientation to the field through lectures, discussions, films, and field trips. The second sequence is a series of design projects introducing the participants to a general approach to architectural problems. Analytic and synthetic operations will be explored.

The format will include morning and afternoon sessions, Monday through Friday, and the cost for the five-week period will be approximately \$700 including fees, room, and meals.

Inquiries should be directed to Charles Pearman, Director, Introductory Program in Architecture, College of Architecture, Art, and Planning, Cornell University, Ithaca, New York 14850.

Architecture Summer Design Program

June 18–August 3

A summer term in design will be offered in the field of Architecture if there is sufficient student demand. The seven-week term is offered on the undergraduate level only.

For further information and application forms for either Elective Design 119 or 150 write to Director of Summer Programs in Architecture, College of Architecture, Art, and Planning, 129 East Sibley Hall, Cornell University, Ithaca, New York 14850.

Elective Design 119.

A sequence of lectures on architectural theory integrated with a series of design exercises. Each design exercise concerns a conceptual issue abstracted from the general principles discussed in the lectures, e.g., elements and systems of spatial definition, sequence and "promenade architecturale," accommodation of the ideal to the circumstantial.

The major objective of the course is to explore the relationship between general, theoretical concepts and specific design concepts, and to examine the relationship between intention and expression.

Course

Arch. 119 Elective Design (U). Six hours credit. *June 18 to August 3.* Prerequisite: Design 104. Also open to students with advanced standing who have successfully completed Design 102 for elective credit. L. F. Hodgden and W. Seligmann. After successful completion of this course, credit hours may be applied for sequence design credits by petition.

Elective Design 150.

An interdisciplinary project-oriented course which will include substantial aspects of design, structural and computer applications, and visual communication techniques. Emphasis will be placed upon the inherent conceptual relationships between architectural and structural design. Studies will include the utilization of computer analysis to determine structural behavior.

New concepts, including machine-generated images, will be explored in the employment of graphic and photographic techniques with respect to architectural investigations and presentations.

The course will focus on design problems which result in final products. Design studio work will be supplemented by appropriate lectures, seminars, and possibly field trips.

It is hoped that undergraduate architecture students whose primary interests are architectural design and whose secondary interests involve either computer applications, architectural structures, or visual communications will participate. These secondary interests are *not* a prerequisite for students wishing to concentrate on the design component.

Course

Arch. 150 Elective Design (U). Six or eight hours credit. *June 18 to August 3.* Enrollment limited to architecture students of satisfactory standing. By petition of the student, credit earned in this course may be considered equivalent to one term of design as required in the curriculum. A. Chimacoff, D. P. Greenberg, and E. Messick

Studios in Art

See Summer Arts Festival, p. 61.

Exploring the Visual Arts

See Summer Arts Festival, p. 60.

Summer Chinese Language Program

June 11–August 17

The Summer Chinese Language Program is a program of intensive language instruction in Chinese (Mandarin and Cantonese).

Courses 101u and 102u and 101C and 102C meet four hours per day; courses 201u and 202u meet three hours per day. In addition, all courses have regularly scheduled daily laboratory study. Twelve credit hours, which is the equivalent of one year of study in a regular academic-year course, is the maximum for which a student may register.

Tuition for the program is \$80 per credit hour. Fees amount to \$5 per week. For further information and application forms, write Professor John McCoy, Summer Chinese Language Program, 325 Rand Hall, Cornell University, Ithaca, New York 14850.

Courses

Chinese 101u Elementary Chinese (Mandarin) (U,G).

Six hours credit. *June 11 to July 13.* J. McCoy and staff.

Chinese 102u Elementary Chinese (Mandarin) (U,G).

Six hours credit. *July 16 to August 17.* Prerequisite: 101u or equivalent. J. McCoy and staff.

Chinese 101C Elementary Cantonese (U,G).

Six hours credit. *June 11 to July 13.* J. McCoy and staff. Modern spoken Cantonese and written Chinese in Cantonese pronunciation.

Chinese 102C Elementary Cantonese (U,G).

Six hours credit. *July 16 to August 17.* Prerequisite: 101C or equivalent. J. McCoy and staff. Modern spoken Cantonese and written Chinese in Cantonese pronunciation.

Chinese 201u Intermediate Chinese (Mandarin) (U,G).

Four hours credit. *June 11 to July 13.* P. S. Ni.

Chinese 202u Intermediate Chinese (Mandarin) (U,G).

Four hours credit. *July 16 to August 17.* Prerequisite: 201u or equivalent. P. S. Ni.

Choral Music Program

See Summer Arts Festival, p. 60.

Cornell Alumni University

July 15–August 11

The Cornell Alumni University, a special summer program designed for alumni, their families, and their friends, provides an opportunity for continuing education based on a broad approach to man and his values in today's society. The program, consisting of four one-week units, offers two series of lectures

on each week's topic. The first and third weeks will be on *The Edge of Discovery—The Mind of Man*; the second and fourth weeks will be on *The Edge of Discovery—Man and His World*. Seminars will be held following the lectures to afford all participants an opportunity to share and exchange their viewpoints.

This educational program, together with the natural beauty of the Cornell campus and the recreational opportunities for which the Finger Lakes Region is known, offers both a stimulating and pleasantly relaxing vacation.

Families are encouraged to attend both weeks. Provisions have been made for children of all ages. Teenagers may participate in a modified academic and recreational program which is designed to stimulate their interest in higher education and acquaint them with the opportunities afforded at Cornell University.

A camp will be available for youngsters from five through twelve years of age, a nursery school for the three- to five-year-olds, and, at an additional charge, individual babysitting will be available for children under three years of age.

Tuition charge per week per person, including room and board, is \$145 for adults and \$90 for youngsters. Any additional fees will be indicated on the application for admission.

The program expects to accommodate approximately 160 adults per week. For alumni, all applications will be accepted on a first-come, first-served basis. Individuals who are not Cornell graduates are welcome to join the program provided space is available.

For further information and application forms, write to G. Michael McHugh, Director, Cornell Alumni University, 227 Day Hall, Ithaca, New York 14850.

The Edge of Discovery

First and third weeks: *July 15–21 and July 29–August 4* "The Mind of Man".

Cornell Faculty Presenting Lecture Series:
Max Black, Susan Linn Sage Professor of Philosophy
Urie Bronfenbrenner, Professor of Human Development and Family Studies

Theodore J. Lowi, John L. Senior Professor of American Institutions

Mary Beth Norton, Assistant Professor of American History

Second and fourth weeks: *July 22–28 and August 5–11*; "Man and His World".

Cornell Faculty Presenting Lectures Series:

Antonie W. Blackler, Associate Professor of Zoology

H. David Block, Professor of Theoretical and Applied Mechanics

Charles F. Hockett, Goldwin Smith Professor of Linguistics and Anthropology

Edward P. Morris, Professor of French

Summer Dance Program

See Summer Arts Festival, p. 59.

Engineering Cooperative Program Summer Term

May 29–September 1

Selected courses of the regular curricula in the College of Engineering are offered in the summer to accommodate the schedule of Cornell students

the Cooperative Program. Within the enrollment capacity of each course, other students may be admitted provided they present satisfactory evidence of being prepared and a letter of authorization from the college or university in which they are enrolled.

Courses are scheduled in two separate but consecutive seven-week periods: first period, May 29–July 14; second period, July 16–September 1. A schedule of courses to be offered will be available after April 16, 1973.

Because the Cooperative Program Summer Term is essentially a curriculum term in the College of Engineering, tuition and fees are not those of the regular summer sessions but are based upon the tuition and fees for a semester in the academic year.

In general, the regulations described for the summer sessions apply also to the Engineering Cooperative Program Summer Term. Health services and library facilities are available during the Engineering Cooperative Program Summer Term.

As far as they can be scheduled, courses of the regular summer sessions may be arranged for students admitted to the Engineering Cooperative Program Summer Term.

For applications, address Director of the Engineering Cooperative Program, Upson Hall, Cornell University, Ithaca, New York 14850.

Engineering Short Courses

The Engineering Short Courses are noncredit courses intended for practicing engineers and scientists who wish to extend or update their knowledge of various technical subjects. Listed below are some of the courses being offered during the summer which are coordinated by the Office of Continuing Education in the College of Engineering and include lectures, computation sessions, and laboratory periods.

Modern Engineering Concepts for Technical Managers
Managing Technical Personnel
Finite Element Analysis: Fundamentals
Structural Model Analysis
Structural Design for Earthquakes
Engineering Control of Industrial Wastewater
Automatic Library Processing and Information Retrieval
Recent Advances in Active and Digital Filtering
Designing Strength and Reliability into Mechanical Components
Introductory Electron Microscopy
Light Microscopy

For a complete listing, further information, and application forms, write to the Director of Continuing Education, Carpenter Hall, Cornell University, Ithaca, New York 14850, or call 607/256-4326.

English as a Second Language

June 27–August 10

An intensive program in English for speakers of other languages will be offered through the Department of Modern Languages and Linguistics. Modern methods of teaching language will be used to provide greater fluency and comprehension of both oral and written English.

This program is designed with particular attention to the requirements of nonnative English speakers who plan

to attend institutions of higher learning and whose lack of fluency may hinder them. English will be taught at an advanced intermediate level, and *no beginning students will be admitted.*

Classes will meet four hours for five days each week. Students wishing to take less than the full six-week program may do so on a noncredit basis on the approval of the instructor. Those wishing credit must attend the entire six-week program and register in English 102 (below).

For further information and application forms write: Director, English as a Second Language, 105 Day Hall, Cornell University, Ithaca, New York 14850.

Course

Engl. 102 English as a Second Language (U.G.)

Six hours credit. June 27 to August 10. Twenty hours of instruction per week. Time and place of first class meeting will appear in the *Supplementary Announcement* available on registration day. C. E. Elliott.

An intensive English course for students at an advanced intermediate level. Colloquial modern English is taught four hours a day, five days a week. The emphasis is on oral rather than written English.

Institute in Environmental and Stochastic Models

July 2–27

Environmental and Stochastic Models, a summer institute supported by the National Science Foundation, is intended for college teachers of mathematics, operations research, industrial engineering, management science, mathematical economics, and related areas. There will be daily lectures on stochastic processes and topics from modern applied mathematics. The basic mathematical methods, modeling aspects, and recent applications will be emphasized. There will be additional lectures in order to present a general survey of the analytical approaches used in these fields.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1973 program.

Further information may be obtained by writing Professor William F. Lucas, Director of the Institute, Operations Research Department, Upson Hall, Cornell University, Ithaca, New York 14850.

Cornell Summer Program in Germany

Dates to be Announced

Cornell University's Summer Program in Germany affords students the opportunity of receiving instruction in German language and literature and for studying the contemporary culture of modern Germany. Instruction will be under the supervision of the Goethe Institute.

Classes will meet Monday through Friday; weekends will be free. All students must have qualification in German (CEEB score of 560 or higher) or equivalent competency at the beginning of the program. Participants will be divided into groups according to their level of preparation. Besides the regularly scheduled classes, there will be group activities and trips to local points of interest. To facilitate maximum exposure to the German-speaking environment, students will live with German families whenever possible.

The courses taken will be roughly equivalent to those offered at Cornell University during the regular academic year. Six hours of college credit will be granted for satisfactory completion of the program.

The cost of the program will be approximately \$600, which includes room and board for eight weeks, tuition, and all activities sponsored by the program. The cost does not include transportation to and from Germany, cost of books and materials, or personal expenses.

For further information about this program write to the Chairman, Department of German Literature, 172 Goldwin Smith Hall, Cornell University, Ithaca, New York 14850.

Horticulture for the Enthusiastic Gardener

July 22-28

The purpose of this five-day course, offered in conjunction with *Cornell Alumni University*, is to develop better understanding of plants, their functions, and their use in landscape. The course will include basic botany for gardeners, introduction to plant families and plant materials, and discussion of their use in gardens. One day will be devoted to plant propagation with emphasis on woody plants.

The program will include lectures, field trips and laboratory work in the Cornell greenhouses.

Under the supervision of the director of the Cornell Plantations, Dr. Richard M. Lewis, classes will be taught by members of the Department of Floriculture and Ornamental Horticulture and by the staff of the Cornell Plantations.

Adults attending this course are urged to bring their families with them so that their children and spouses can attend Cornell Alumni University which is described elsewhere in this catalog.

Tuition charge per week per adult, including room and board, is \$160. Any additional laboratory fees will be indicated on the application for admission. The program is limited to 30 adults.

For further information and application forms, write to G. Michael McHugh, Director, Cornell Alumni University, 227 Day Hall, Ithaca, New York 14850.

Hotel and Restaurant Administration

June 18-August 3

In 1922 Cornell University established, with the cooperation and financial assistance of the American Hotel Association, a four-year course in hotel administration for secondary school graduates desiring to enter the administrative departments of the hotel business. Many hotel proprietors and managers who have been unable to take a four-year university course have asked for shorter courses with less formal entrance requirements. To meet this demand, unit courses in hotel administration, one to three weeks in length, are offered in the summer.

A circular giving full details of these courses has been issued and will be sent upon request. For this circular, for other information about the work in the School, and for admission to these courses, address the Administrative Aide, Summer School of Hotel Administration, Statler Hall, Cornell University, Ithaca, New York 14850.

Human Ecology Unit Courses

Courses are offered by four departments of the College of Human Ecology. These courses are from two to six weeks' duration and may be combined with courses offered by other departments or with independent study to provide a longer summer program. However, each unit course involves full-time participation for the designated period. One course includes one week spent in New York City or Washington, D.C. and another will be held in Rochester, New York.

Early applications are requested. Registration will be completed at the first meeting of the class for each course. Unless otherwise stated, further information and application forms can be obtained by writing to the address listed at the end of each course description.

Community Service Education

June 6-August 10

CSE 416u The Helping Relationship (U.G.)

Three hours credit. June 6 to June 26. Enrollment limited to 20 students. S-U grades optional. M T W Th F 9:30-12 and afternoons for individual and group work. Martha Van Rensselaer N225. I. I. Imbler.

Theory, research, and training in interpersonal skills and attitudes necessary to the helping relationship. Training includes sensitivity sessions, simulations, and skill practice exercises. Program cost is \$105. Preregistration is required.

For further information and application forms write Professor Imbler, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

CSE 531u Seminar on Human Service Programs (U)

Three hours credit. June 25 to July 13. Enrollment limited to 20 students. S-U grades optional. To be held in Rochester, New York (location to be announced). B. Bradlyn, D. Fields, and staff.

This section will focus on the interactions of and use of community resources in the delivery of human services. It is designed for professionals in home economics, health, and social services. Course work will include field placements and observation. Program cost is \$105. Preregistration is necessary for selection of field work.

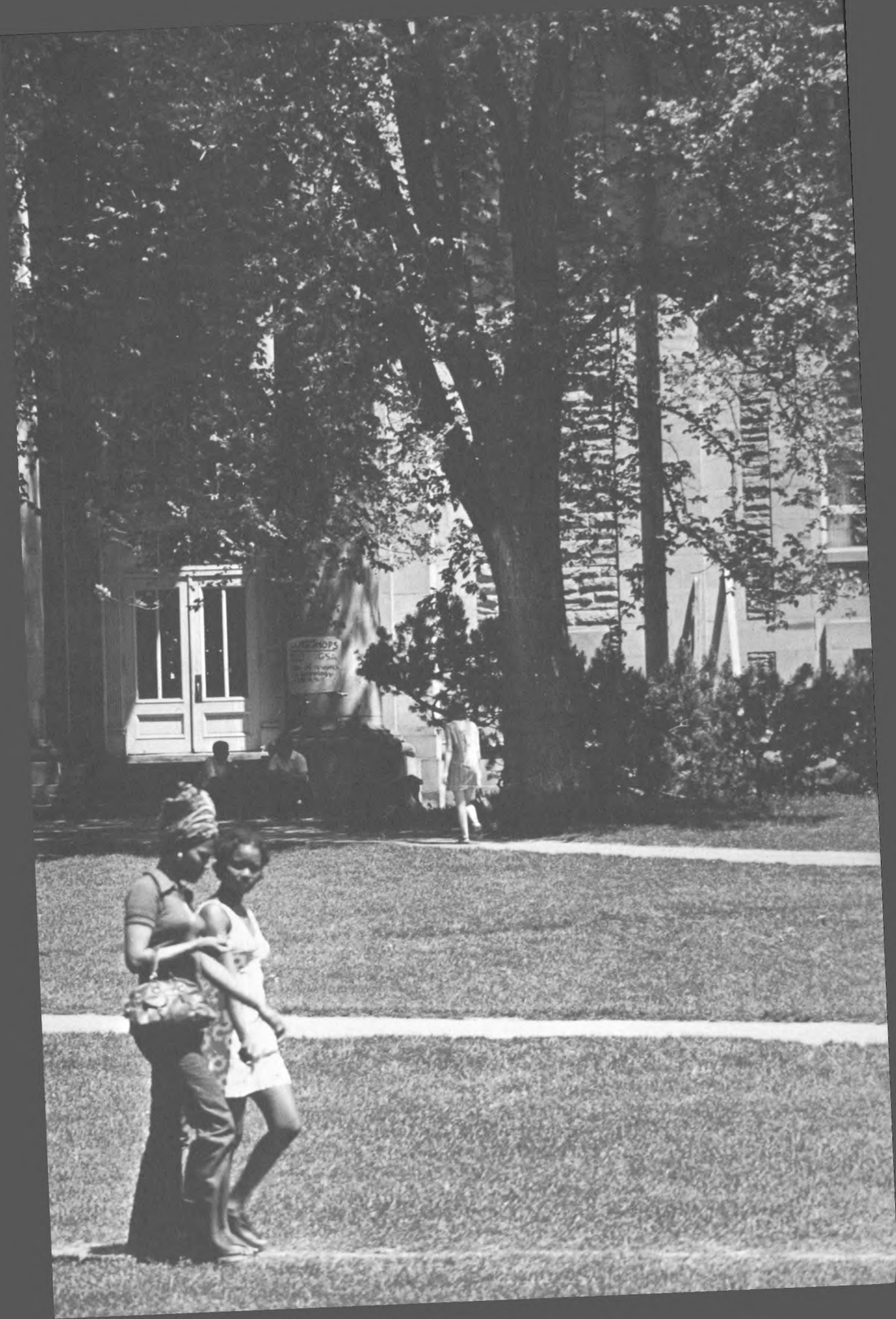
For further information and application forms write Professor Bradlyn, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

CSE 591u Building Evaluation into Health Education Programming (U.G.)

Three hours credit. July 23 to August 10. Enrollment limited to 25 students. S-U grades optional. M T W Th F 9:30-12 and afternoons for individual and group work. Martha Van Rensselaer N225. H. Y. Nelson.

A workshop designed for professionals involved in health education programming. The need to strengthen the evaluation of health education programs is an increasingly heard concern. Accountability is a necessary facet of developing responsible public education programs in the 1970's. This workshop will be concerned with psychological-educational measurement, behavioral objectives, characteristics of evaluation instruments, a means of collecting data for evaluative purposes. Participants will have opportunities to share experience regarding the use of evaluation instruments and methods, as well as to work on an evaluative instrument for a particular program effort of their choice. A combination of lectures and ample opportunity for individualized work will be provided. Program cost is \$105. Preregistration is required.

For further information and application forms write



Professor Nelson, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

CSE 625u The Health Educator and Community Health Services (U,G). Three hours credit. *June 27 to July 20.* Enrollment limited to 25 students. S-U grades optional. M T W Th F 9:30-12 and afternoons for individual and group work. Martha Van Rensselaer N225. J. Kurowski.

A description of present and proposed systems for delivery of health services at the community level. Current critical issues in public health such as drug abuse, venereal disease, and school-age pregnancy will be selected as examples of problems requiring coordinated action by health educators and other health service providers. Alternative approaches to these problems will be described in terms of their implications for school and health department policies and programs. Program cost is \$105. Preregistration is required. For further information and application forms write Professor Kurowski, c/o Community Service Education, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

Consumer Economics and Public Policy

July 16-August 3

CEPP 535u Consumer in the Market (G). Three hours credit. Enrollment limited to 20 students. M T W Th F 9-12 and 1-4. Martha Van Rensselaer 124. N. B. Conklyn.

A workshop designed for college teachers of consumer education who want to gain further insight into the relationship between consumers, business, and government. Current consumer issues will be examined during an intensive two-week seminar on campus. In addition, a one-week field trip to New York City or Washington, D. C., will provide an opportunity to view various elements of the market and discuss consumer problems with representatives from industry and government.

This workshop is being developed in cooperation with several land-grant institutions and the consumer education division of a large national retail organization. Admission to the New York City portion of the program is limited. Applicants must have participated in the on-campus seminar and preference will be given to persons who are currently teaching in university or college programs. The cost for tuition will be \$65 per credit hour plus \$5 per week General Fee for the two weeks on campus.

Participants are responsible for their own travel and maintenance in the field. Registration will be held on the first day of the workshop at 9 a.m. in Room 124, Martha Van Rensselaer Hall.

For further information and application forms write Professor Nancy Conklyn, Consumer Economics and Public Policy, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

Design and Environmental Analysis

June 27-August 10

Five courses in theoretical or applied design, plus a workshop from the area of environmental analysis, comprise this summer's offerings from the Department of Design and Environmental Analysis. Each of the five courses offers three hours' credit, and will cost \$45 per credit hour (\$135 plus any materials charge plus \$5 per week General Fee). Two six-week courses may be elected simultaneously, or two three-week unit courses back to back, but a six-week course may not be elected along with a three-week course; a

three-week unit course is considered a full load during the designated period.

Unless otherwise stated, preregistration is required by June 1, 1973, and must be accompanied by a \$25 deposit (check or money order) made payable to Cornell University. Deposit will be credited against tuition or will be returned in the event the course must be cancelled.

The Cornell Microwave Oven Systems Workshop will be a noncredit program held June 20-22. For information and application forms for the workshop write to either G. Armbruster or M. E. Purchase, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

For further information or application forms for the following courses write to Barbara Reschke, Summer School Coordinator, Design and Environmental Analysis, Martha Van Rensselaer Hall, Cornell University, Ithaca, New York 14850.

DEA 252u Historic Furniture and Interior Design (U)

Three hours credit. *June 27 to July 17.* M T W Th F 8:30-11. Martha Van Rensselaer 317. G. C. Millican. A study of the patterns of historical development and change as revealed through American furniture and interiors, 1650-1885. Design forms are considered individually, collectively, and in their overall historical context as they express the efforts, values, and ideals of American civilization.

DEA 261u Fundamentals of Interior Design (U,G).

Three hours credit. *July 18 to August 8.* Fundamentals of Design (DEA 110) or equivalent studio course recommended preparation. M T W Th F 8-12, plus 1 hour per week to be arranged. Martha Van Rensselaer 318. G. C. Millican.

A studio course which emphasizes the fundamental principles of design as applied to the planning of residential interiors and coordinated with an understanding of family and individual needs. Studio problems explore choices of materials, space planning, selection and arrangement of furniture, lighting, and color. Illustrated lectures, readings, and introductory drafting and rendering techniques are presented as background information and tools for solving interior design problems. Maximum cost of materials, \$15.

DEA 342u Design: Weaving (U,G). Three hours credit. *June 27 to August 3.* Prerequisite: basic design course (DEA 110, Fundamentals of Design) or equivalent experience in drawing, art, or photography.

Enrollment limited to 16 students. M T W Th F 9:30-12:30. Martha Van Rensselaer G71.

A studio course encompassing the basics of weaving the workings of a loom, and the possibilities inherent in the loom's functions. Pattern analysis, pattern design, large-scale design and its relationship to woven objects, familiarization with fibres and different types of yarns and materials, and dyeing will be taught and their importance emphasized. Also, the relationships between color, technique, yarns, and function will be carefully considered in the weaving of a number of experimental samples as well as several more involved woven projects. Minimum cost of materials, \$45. Deposit will be applied towards total materials cost instead of towards tuition.

DEA 347 Design: Introductory Textile Printing (U)

Three hours credit. *June 27 to August 10.* Prerequisite: Fundamentals of Design (DEA 110) or any comparable studio course. Enrollment limited to 8 students. M T W Th F 12:30-3:30. Martha Van Rensselaer B4.

E. D. Rothenberg.

A studio course concerned not only with the development of professional silk-screen techniques and skills (i.e., screen building, dye mixing, and color

ching), but also emphasizing an individualized approach to design. Minimum cost of materials, \$45. Deposit will be applied towards total materials cost instead of towards tuition.

390 Flat Pattern Development (U,G). Three hours credit. June 27 to August 10. Prerequisite: elementary construction skills. Not open to DEA apparel majors. Enrollment limited to 25 students. M T W Th 9:30-12:30. Martha Van Rensselaer 215. *Students must preregister by May 15.* A. R. Grzelak.

Study of the fundamental principles and processes of flat pattern design and fitting. Laboratory exercises include the development of a master pattern from an individual from a commercial pattern. Students expected to relate flat pattern techniques to interpretation of design sketches, body form, the use of materials, and functional requirements. Design problems will be carried to various stages of completion. Maximum cost of materials, \$20.

347 Design: Intermediate Textile Printing (U,G). Three hours credit. June 27 to August 10. Prerequisite: Fundamentals of Design (DEA 110) or any comparable studio course, plus experience in textile printing. Enrollment limited to 8 students. M T W Th F 10-3:30. Martha Van Rensselaer B43. E. D. Benberg.

This course will be given in conjunction with DEA 347. See preceding course description.

Human Development and Family Studies

July 9-20

FS 336u Methods and Materials Workshop for Teachers and Aides in Preschool Programs (U).

Three hours credit. Enrollment limited to 24 students. One credit. M T W Th F 9-4. Martha Van Rensselaer Staff.

This is to be a workshop course for paraprofessionals and teachers which will expose and involve the student in a variety of methods and creative use of materials. It will cover such topics as setting up the learning environment, food in the classroom, science and nature study, music, props for language development, manipulative activities, numbers, and art. These topics will be explored through workshops, films, field trips, demonstrations, and discussion groups. Cost of tuition fees will be \$70 for the two weeks. Participants accepted on a first-come basis.

Registration will be July 9 at 9 a.m. in Martha Van Rensselaer 172. For further information and application forms write: Henry N. Ricciuti, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

Latin American Language and Area Program

The Latin American Language and Area Center, in cooperation with the Northeast Consortium for Andean Studies, offers a course of intensive instruction in the Quechua language. Also listed below are two courses related to Latin American studies. Technically they are not part of this program, however, and procedures for application, payment of tuition and fees, and registration in these courses are those of the regular session in which they are offered.

The deadline for applications for admission to the Quechua course is May 14, 1973. Applications for admission may be obtained from T. E. Davis, Director, Latin American Studies

Program, 190 Uris Hall, Cornell University, Ithaca, New York 14850.

Quechua Language

Que. 101 Elementary Quechua (U,G). Eight hours credit. June 18 to August 10. M T W Th F 8-10 and 11-1. Twenty hours of instruction per week for eight weeks. Uris G-20. D. F. Sola and staff. An intensive introductory course in the Cuzco dialect of Quechua, emphasizing auditory and speaking skills.

Spanish language courses offered by the Department of Modern Languages and Linguistics can be found on p. 24 and pp. 38-40.

Latin American Area Studies

Natural Resource Potential for Food Production in the Tropics (U,G). See Agron. 411, p. 26.

Government and Politics of Latin America (U,G). See Gov. 340t, p. 24.

Summer Program in Marine Science

August 1-28

This four-week program is offered cooperatively by Cornell University, the University of New Hampshire, and the State University of New York, and carries transcript credit at the participating universities. It is presented at the Isles of Shoals, ten miles offshore on the Maine-New Hampshire line. Construction of the Shoals Marine Laboratory on Appledore Island began in 1971. The new facilities, although not entirely completed, will be used for this program for the first time in 1973.

Uninhabited Appledore Island, approximately 100 acres in extent with a rugged shoreline of about three miles, is a location of exceptional value for marine studies. Its biota is unusually rich. It lies far enough offshore to escape the major effects of coastal pollution, and is free from distractions to the educational process. It is also a center of fishing activity, and the Shoals Marine Laboratory enjoys the stimulating cooperation of a number of commercial fishermen and the National Marine Fisheries Service in demonstrating the realities of making a living from the ocean.

Here, living material and habitats are emphasized in introducing students to the major disciplines of oceanography and in rounding out the students' knowledge of these topics as presented at inland locations.

The participating universities maintain or bring to the Isles of Shoals a wide range of oceanographic equipment and instruments, microscopes, and library resources to support demonstrations and exercises in marine biology, marine geology, and physical oceanography of the estuary and the continental shelf. Shipboard demonstrations of oceanographic tools and techniques are conducted.

Also included in the instructional program are diving, small boat handling, positioning, marine electronics, and other practical topics useful to marine scientists. A number of vessels are available by ownership or charter to serve the program. These include the 45-foot research vessel, *Jere Chase*, of the University of New Hampshire, the 35-foot research vessel, *Wrack*, the diesel launch, *Scomber*, and several smaller boats. The program also makes use of the 65-foot island ferry, *Viking Star*, and, by arrangement with the National Marine

Fisheries Service, larger research vessels. More than forty lecturers from academic institutions, marine industry, government agencies, and fishermen serve on the faculty.

Enrollment in this program may be limited. Living accommodations may be primitive. Expenses will total \$570. This covers tuition, fees, board, room, health insurance, and special transportation during the four-week period. Scholarship and assistantship support is available. All application procedures are handled by Cornell University.

For further information and application forms, address the Director, Summer Program in Marine Science, Plant Science 202, Cornell University, Ithaca, New York 14850.

Course

Bio. Sci. 364u Introduction to Marine Science (U,G).

Five hours credit. August 1 to August 28. Prerequisite: a full year of college biology. Daily lectures, laboratory, and field work. S-U grades only. J. M. Kingsbury and staff.

Ornithology Field Seminar for Adults and Family Groups

May 27–June 2 and July 15–21

Two one-week, noncredit courses led by Peter Paul Kellogg, professor emeritus of ornithology and biological acoustics. Designed for the serious amateur ornithologist and bird lover, this program offers instruction in field observation, familiarization of some techniques used in field research, and acoustics. Lectures cover various aspects of the biology of birds including anatomy, classification, migration, orientation, behavior, ecology, and distribution.

Early morning and late afternoon field trips will emphasize observation and recording of bird sounds, as well as field natural history. Laboratory work will include familiarization with sound reproduction equipment in the Laboratory of Ornithology.

This special summer program is being offered jointly with *Cornell Alumni University*. The tuition charge of \$160 per week per person includes room and board, all supplies, and course related materials. Participants are required to bring their own binoculars and field guide for birds.

The course is limited to thirty persons per week with each individual being assigned to a section for field trips and laboratory work.

For further information and application forms write to G. Michael McHugh, Director, Cornell Alumni University, 227 Day Hall, Ithaca, New York 14850.

Topics in Modern Physics for Talented High School Juniors

June 27–August 10

Topics in Modern Physics for Talented High School Juniors is a program supported by the National Science Foundation and designed for secondary school students who will have completed eleventh grade. It provides a superior opportunity in physics, in both classroom and laboratory, to supplement the usual offerings in the secondary school. The program is designed:

- (1) to impart to the student some of the exciting adventure of physical science in our present-day culture,
- (2) to facilitate self-evaluation of the student's personal interest in science, and
- (3) to provide a meaningful first exposure to the academic atmosphere of the college.

This program will not duplicate or take the place of any conventional college course, but it will supplement the secondary school physics experience by a treatment in depth of some fundamental physical concepts and theories, and by independent experimental work in a well-equipped laboratory.

Brochures regarding this program were mailed in January, and the deadline has passed for requesting application forms for the 1973 program. Those interested in the 1974 program may receive further information by writing to Professor R. C. Richardson, Director, Topics in Modern Physics, Clark Hall, Cornell University, Ithaca, New York 14850.

Problems of Pollution and Price the Environment and the Economy

July 15–21

This program, offered in conjunction with *Cornell Alumni University*, is designed to acquaint the layman with some of the pressing issues of environmental pollution and its implications for the nation's economy and its economic system. It deals first with the development of a framework within which to understand pollution as an economic phenomenon. The meaning and application of cost-benefit analysis is presented in layman's terms. The implications of pollution control through federal and state regulatory agencies are analyzed and compared with pollution control through "appropriate" methods for pricing for environmental resources. The true significance of the "social responsibility of business" is analyzed in this context.

Existing U.S. pollution control legislation and its implementation is then analyzed: the automobile and Clean Air Act; "zero discharge" and the Clean Water Act. The role of property "rights" as a social institution to aid in pollution control is specifically examined.

In the final sessions of the program, the political and economic relationships among pollution, productivity, prices, regulation, and inflation are explored through studies. It is expected that lectures, discussions, guest lecturers, and cases will be used.

This program is offered by Professor Alan K. McAdams of the Graduate School of Business and Public Administration. Professor McAdams was in Washington, D.C., during 1971–72 as a senior staff economist with President's Council of Economic Advisors. His responsibilities included the economics of environmental pollution and environmental controls.

Adults attending this program are urged to bring their families with them so that their children and spouses attend *Cornell Alumni University* which is described elsewhere in this catalog.

Tuition charge per week per adult, including room and board, is \$160. Any additional laboratory fees will be indicated on the application for admission. The program is limited to 45 adults.

For further information and application forms, write to G. Michael McHugh, Director, Cornell Alumni University, 227 Day Hall, Ithaca, New York 14850.

College Preparatory Reading and Study Skills Program

July 2–August 3

A five-week program, designed to teach students the reading and study skills necessary for successful scholarship at the college level. It is intended for college-bound students who will have completed their junior or senior year of secondary school by June 1973. Registration will be limited; therefore, early applications are encouraged.

Students will meet daily, both mornings and afternoons, beginning Monday, July 2, and ending Friday, August 3. Additional work outside of class time is required each day.

The total charge to out-of-area students is \$575. This covers room, board, tuition, and all fees including those for health services and student union privileges. Cost to commuting students is \$300, including tuition. Students must provide textbooks.

A preregistration deposit of \$50 is required following notification of acceptance. There are no scholarships offered in the program.

Students will live in a University dormitory facility reserved exclusively for the younger students. There will be one counselor to every ten to twelve students. Rules and regulations regarding residence halls, curfew, etc. are similar to those normally applying to college freshmen. Students are not allowed to have cars. Weekend commuting is discouraged, and no refunds are provided for meals not taken in the dormitory.

Students will be able to take advantage of the lectures, theatre presentations, and summer recreation facilities of the Ithaca area.

For application forms and additional information write: Carl A. Jurica, Director, Summer Reading Program, 105 Sibley Hall, Cornell University, Ithaca, New York 14850. Applications are due by June 1, 1973.

The Program

Reading. Flexibility in reading will be emphasized. Topics covered will include reading techniques for maximum comprehension, skimming and scanning, speed reading, the critical approach in reading essays, and many more techniques for situations unique to college study.

Writing. Emphasis will be placed on the writing of research and term papers. Each student will learn and apply the series of skills from the first step of selecting a topic to final step of typing the last revision. Such skills are an important factor in an individual's success in college courses.

Study Skills. Using actual Cornell classes as laboratory exercises, students will study and practice the art of listening and taking notes, of reading and remembering college assignments, and of organizing time efficiently. In addition, other topics important to the successful student such as setting realistic goals and understanding the college experience will be explored.

Preparation for Examinations. Many students, although quite capable and knowledgeable, find that they are not

able to write exams that reflect their true learning. Instructions will be given in preparing for exams and in the actual process of taking an exam; training will also be in the development of the skill of "test-wiseness"—the ability to cope with test-taking situations and to use the characteristics of tests to reach the full potential of one's knowledge and aptitudes. Emphasis will be placed on the standardized tests that students will be required to take in their senior or college years.

Listening Skills. A series of exercises on tapes has been developed to teach students both the basic and the advanced principles of efficient listening. These principles will be used in developing skills in taking notes on classroom lectures at the college level.

Vocabulary and General Communication Skills.

Vocabulary-building techniques will be discussed and practiced; in addition, the basic principles of organization of communication will be stressed.

Individual Work. If a student needs work in a specific area such as comprehension or spelling, an individualized program will be designed for him as part of his laboratory work.

Laboratory Work. Students will work daily in the reading laboratory to practice good reading techniques on reading machines which have proved to be instrumental in increasing both the rate of reading and the level of comprehension. Individual projects will also be completed in the laboratory sessions.

Internship Program in Urban Planning and Development

June 25–August 17

This program involves a summer internship primarily in the New York metropolitan area in public or private planning, housing, urban renewal, and development agencies. Positions also available in various functional agencies dealing with transportation, recreation, water resources, etc., and there are occasional openings with citizen groups and private consulting firms. Participants are employed full time at current salaries and attend evening lectures and discussions two evenings a week as part of the program. In addition, there are several field trips in the New York area and to other East Coast cities.

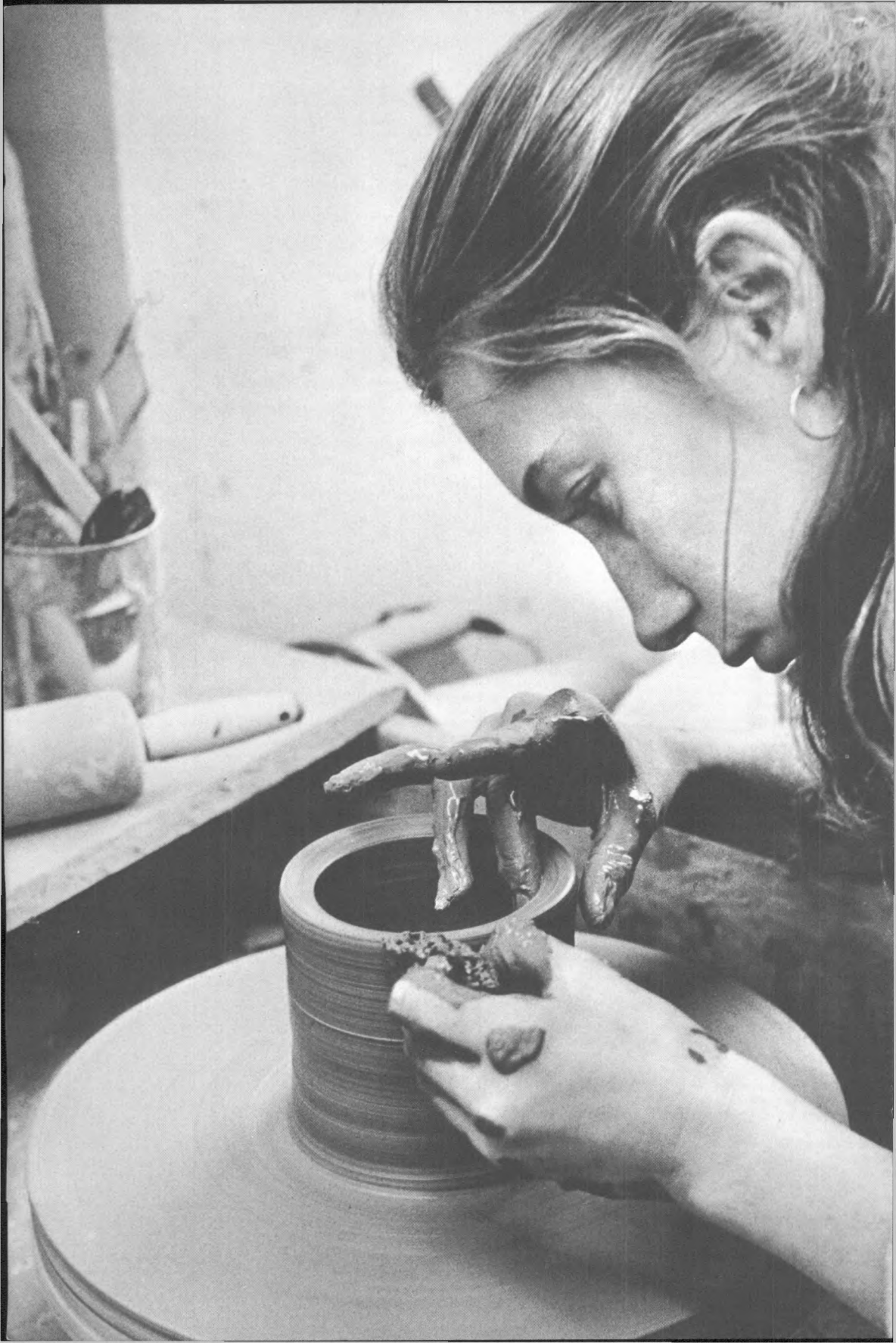
For further information address Professor Stuart W. Stein, Department of Urban Planning and Development, West Sibley Hall, Cornell University, Ithaca, New York 14850.

Course

UPD 672 Internship Program in Urban Planning and Development (G). Three hours credit. Open to graduate students in planning and others with permission. S. W. Stein, staff, and visiting lecturers.

Viola Da Gamba Summer Program

See Summer Arts Festival, p. 60.



Summer Arts Festival

The Summer Arts Festival provides courses of study in various creative arts for participants who desire to advance their knowledge in a particular discipline. The program provides the richest possible environment for students of the arts, members of the community, and visitors to the area.

Three workshops on creative writing are designed for aspiring as well as talented authors and poets. The Summer Dance Program, a workshop on dance, movement, and modern technique will be offered for a six-week period and can be taken noncredit, or, with special arrangements, college-level credit can be earned for the program.

Exploring the Visual Arts (EVA), a program designed for high school juniors, is given in conjunction with Studios in Art. The EVA program is an in-depth introduction to both the formal and creative aspects of visual arts.

The Summer Concert Series presents talented, distinguished performers in six evening concerts. Young professional singers, joined by talented students and residents of the area, comprise the Cornell Chamber Ensemble, and will perform in one formal concert in addition to informal concerts and recitals. The Viola Damba Summer Program offers an intensive two-week course emphasizing both technique and performance.

A three-week intensive course in photography, offered in addition through the Department of Architecture, will be given in addition to a two-week photography course offered in the Studios in Art program. The Studios in Art program offers instruction in six areas of the fine arts, taught by distinguished artists from the faculty of the Department of Art.

The Cornell Summer Theatre, composed of professional and student actors, will present a variety of perspectives on the modern and classic theatre.

In addition to the workshops, the concert series, and the summer theatre, scheduled throughout the summer sessions will be art exhibitions, lectures by prominent speakers on topics of vital interest to the community, formal concerts and recitals, impromptu dance exhibitions, poetry readings, and a full schedule of films including many old favorites. The calendar of events in the *Weekly Bulletin* will contain information on all events as they are scheduled during the summer.

Creative Writing Workshops

June 27–August 10

As part of the Summer Arts Festival, a program of workshops in creative writing is being offered by eminently qualified teachers from the Department of English. The program is designed for students seriously interested in writing as a career and comprises three different workshops

for the development of talent and skills in writing. One workshop is of an exploratory nature and covers poetry, fiction, and other allied forms; the second is a workshop for writers of narrative, short stories, novels, and other similar literary forms; and the third is an advanced poetry workshop.

Individuals interested in applying should use the application at the back of this *Announcement* and refer to the courses listed below. The summer sessions tuition of \$80 per credit hour and the \$5 per week General Fee will apply. (See Tuition and Fees, pp. 10–12.)

Courses

Engl. 303 Creative Writing Workshop: Explorations (U,G).

Four hours credit. M T W Th 11–12:15 and conferences to be arranged. Goldwin Smith 246. B. L. Hathaway.

A workshop for the development of talent and skills in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussion and in conference with the instructor.

Engl. 385 Advanced Fiction Workshop (U,G).

Four hours credit. M T W Th 11–12:15 and conferences to be arranged. Goldwin Smith 160. E. Rosenberg.

A workshop for writers of narrative—short stories, novels, and allied forms—who are in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference with the instructor.

Engl. 387 Advanced Poetry Workshop (U,G).

Four hours credit. M T W Th 3–4:15 and conferences to be arranged. Goldwin Smith 246.

A workshop for poets in need of development beyond the exploratory stages. Participants will submit their work for analysis in group discussion and in conference with the instructor.

Summer Dance Program

June 27–August 10

The six-week Summer Dance Program, presented by the Department of Theatre Arts, will include daily modern technique classes on three levels, elementary and advanced composition classes, and a class in rehearsal and performance.

Although presentation of a formal concert is not an objective of the program, performing opportunities may be provided in studio performances or other informal situations.

The director of the program is Peggy Lawler, director of the Cornell Dance Program. Classes will be taught by Renée Wadleigh, member of the Cornell dance faculty; and guest

artist Peter Saul, a well-known choreographer and instructor of dance.

The dance courses are noncredit. However, an individual who desires to receive academic credit for dance should contact the program director to make special arrangements. The cost of the program for noncredit will be \$150. For those who arrange to earn credit, tuition will be charged at the rate of \$80 per credit hour plus \$5 per week for the General Fee.

For further information and applications write: Director, Summer Dance Program, 105 Day Hall, Cornell University, Ithaca, New York 14850.

Exploring the Visual Arts for High School Juniors

July 2-August 3

The EVA program, given in conjunction with the Studios in Art program, is a noncredit fine arts course designed for qualified high school students who will have completed their junior year in June 1973. Lecture classes combined with studio work give the participants an in-depth introduction to both the formal and creative aspects of visual arts. Students who plan to pursue art in college as well as those students who wish only to investigate the fine arts will find the course of study valuable.

The faculty will include Norman Daly, resident professor of art; and Richard Rutkowski, Donald Queen, and Lorenzo Gilchrist, visiting instructors.

This course will present, through slides and discussions, a study of the formal use of visual elements in historical and contemporary art. Students will be encouraged to use this survey as a basis for individual work. Studio classes in two-dimensional and three-dimensional art forms, sculpture, and graphics studios in serigraph and intaglio printmaking will stress materials and techniques needed for proficiency in these areas. Scheduled free studio time will enable each student to develop an individual approach to his assigned projects.

Field trips to museum exhibitions, outdoor recreational trips, and campus activities round out the program.

Program cost is \$650 and includes tuition, room and board.

Inquiries and requests for application forms should be addressed to Director, Exploring the Visual Arts for High School Juniors, 105 Day Hall, Cornell University, Ithaca, New York 14850.

Music Programs

Choral Music Program

July 8-22

A unique program in choral music provides gifted students and residents the opportunity to join with an ensemble of young professional singers in an intensive two-week institute of rehearsals, recitals, and concerts. Participants constitute the Cornell Chamber Chorale, which rehearses each afternoon and evening.

The Chorale presents a formal concert as part of the Summer Session Concert Series and other informal concerts. Several recitals will be given featuring the professional singers as soloists or in small groups. In addition, the premiere performance of *Prometheus* by Ann Silsbee will be given.

Admission to the Choral Music Program is by consent of the instructor, and inquiries should be addressed to Professor Thomas A. Sokol, Department of Music, Cornell University, Ithaca, New York 14850.

Participants in the Choral Music Program interested in earning college-level credit may register for Music 464.

Course

Music 464u Choral Style (U,G). Three hours credit. Consent of the instructor required. Su M T W Th F 4-5 and 7:30-9 p.m.; S 1-3:30 p.m. Barnes Hall Auditorium. T. A. Sokol.

Summer Session Concert Series

A program of evening concerts by distinguished artists presented for the enjoyment of Summer Session participants and members of the Ithaca community. Tickets will be held at 8:15 p.m. in the Alice Statler Auditorium on five consecutive Thursdays. Concert series tickets will be available for purchase at Barton Hall on registration day, and at the Willard Straight Hall ticket office thereafter. Single tickets will be available at the Statler box office prior to each concert.

- July 5 *Baroque Music*
Robert Conant, harpsichord
John Hsu, viola da gamba
- July 12 *Lute Songs*
Janet Steele, soprano
Lucy Cross, lute
- July 19 *Choral Concert*
Cornell Chamber Chorale
Thomas A. Sokol, Conductor
- July 26 *Sonata Recital*
Tung Dwong-Kwong, piano
Ma Si-Hon, violin
- August 2 *Piano Recital*
Rosemarie Wright, piano

In addition to the above series of concerts, an organ recital will be presented by Donald R. M. Paterson, University Organist, on Sunday, July 15, at 8:15 p.m. in Anabel Taylor Chapel.

Viola Da Gamba Summer Program

July 2-13

This is an intensive two-week course designed primarily for those who are seriously interested in playing the viola da gamba solo instrument. Emphasis will be placed on the understanding of performance practice and the development of adequate and proper technique to perform the solo repertoire of the bass viol, especially music composed by French player-composers of the seventeenth and eighteenth centuries.

Daily class meetings will be held from 10 a.m. to 12 noon Monday through Friday. In addition, each participant will receive two private lessons each week to work on special problems. Afternoons and evenings will be free for practicing and consort playing. In order to provide participants with maximum opportunities for playing at the daily meetings and in informal concerts, the enrollment of the course will be limited to ten. The cost is \$300 for two weeks of instruction and housing.

Inquiries and requests for applications should be addressed to Professor John Hsu, Department of Music, Cornell University, Ithaca, New York 14850.

Photography Courses

asterisk (*) preceding the course number indicates that s for laboratories, field trips, and incidental expenses charged. The amount of the fee immediately follows course description. Course fees are *nonrefundable* and not be prorated if a student cancels a course or draws.

Architecture

ch. 525t The Rudiments of Photography (U,G).
ee hours credit. June 6 to June 26. Enrollment limited 20 students. M T W Th F 9-12, plus darkroom time of the ent's choice (an average of two hours daily). Own mm camera required. Sibley B-18. G. Simian.
rice photographers learn through experimentation with oting, processing, and printing. Emphasis is placed on control of the variables involved to enable effective visualization. Technical and graphic aspects receive al attention. Fee, \$10.

Studios in Art.

Studios in Art

July 2-August 10

contribution of the Department of Art to the Summer Festival is a program of courses in painting, drawing, pture, graphics, and photography designed for students all levels of experience. Classes are kept small to rd ample opportunity for personal communication with ructors and fellow students and to allow participants to k at their own pace.

urses in the above arts are available in each of three -week periods: July 2-13, July 16-27, and July 30-ust 10. Each two-week course carries one hour of ege-level credit.

staff will consist of prominent members of the Cornell lity and visiting artists. Painting will be taught by

Jack Bosson, Norman Daly, Friedel Dzubas and Stefano Cusumano. Jack Squier will teach sculpture. Instruction in intaglio printing will be given by Phyllis Thompson. Zevi Blum will teach drawing and Arnold Singer will teach aluminum plate lithography. A course in photography will be offered by George Simian.

Tuition is \$80 per credit hour plus \$5 per week for the General Fee. For a copy of the Studios in Art brochure and application write to the Director, Studios in Art, 105 Day Hall, Cornell University, Ithaca, New York 14850.

Summer Theatre

The summer program of the Department of Theatre Arts is organized to present a variety of perspectives on the modern and classic theatre. The course offerings, as well as the production work on the summer season of plays, and the final production of these plays in repertory have been designed as an integrated experience.

The Cornell Summer Repertory Theatre is composed of professional actors and graduate and undergraduate student actors under the direction of the University Theatre staff. Among the plays presented by this company in past seasons have been *The School for Scandal*, *The Hostage*, *The Cherry Orchard*, *Feydeau's Look*, *Don't Walk Around Naked*, *Lady Windermere's Fan*, *Taming of the Shrew*, and David Storey's *Home*.

For further information write to Professor James H. Clancy, Lincoln Hall, Cornell University, Ithaca, New York 14850.

The courses listed below are offered by the Department of Theatre Arts during the summer. Complete descriptions of them can be found on p. 42.

Th. Arts 287 Beginning Acting (U,G).

Th. Arts 300 Directed Studies (U,G).

Th. Arts 331 The Modern Experimental Theatre: Europe (U,G).

Th. Arts 332 The Modern Experimental Theatre: America (U,G).

Th. Arts 374 American Film Comedy 1914-1940 (U,G).

Faculty and Administration

University Administration

Dale R. Corson, President of the University
Robert A. Plane, University Provost
W. Donald Cooke, Vice President for Research
Lewis H. Durland, University Treasurer
William D. Gurowitz, Vice President for Campus Affairs
Samuel A. Lawrence, Vice President for Administration
E. Hugh Luckey, Vice President for Medical Affairs
Thomas W. Mackesey, Vice President for Planning
Paul L. McKeegan, Vice Provost
Arthur H. Peterson, University Controller
Richard M. Ramin, Vice President for Public Affairs
Robert F. Risley, Vice Provost
Neal R. Stamp, Secretary of the Corporation and University Counsel

Administrative Board

Martin W. Sampson, M.S., Dean, Division of Summer Session and Extramural Courses; Director, Division of Unclassified Students; and Associate Professor, Industrial Engineering and Operations Research
Barry B. Adams, Ph.D., Chairman of Department and Associate Professor of English
Malcolm S. Burton, B.S., S.M., Associate Dean, Engineering; Acting Director, Engineering Basic Studies; Professor of Materials Science and Engineering
W. Donald Cooke, Ph.D., Vice President for Research, Dean of the Graduate School, and Professor of Chemistry
John L. Doris, Ph.D., Professor of Human Development and Family Studies
Herbert L. Everett, Ph.D., Director of Resident Instruction, College of Agriculture and Life Sciences, and Professor of Plant Breeding
Gerald B. Kelley, Ph.D., Chairman, Modern Languages and Linguistics; Professor of Linguistics, Modern Languages and Linguistics
Norman Penney, J.D., Dean of the University Faculty, and Professor of Law
Thomas A. Ryan, Ph.D., Professor of Psychology

Summer Resident Faculty

Howard G. Andrus, Ph.D., Director, Guidance and Testing Center; Professor of Guidance and Personnel Administration
Robert C. Becklen, B.A., Lecturer in Psychology
Donna C. Bergmark, M.A., Lecturer in Computer Science

Malcolm Bilson, D.M.A., Associate Professor of Music
Nelson E. Bingham, B.A., Lecturer in Psychology
Jonathan P. Bishop, Ph.D., Professor of English
Zevi Blum, B.Arch., Visiting Critic in Art
Isadore Blumen, Ph.D., Professor of Economic and Social Statistics, Industrial and Labor Relations
Jack E. Bosson, Jr., M.F.A., Assistant Professor of Art
Betty J. Bradlyn, M.S., Assistant Professor of Community Service Education
Richard D. Brecht, Ph.D., Assistant Professor of Linguistics
George J. Broadwell, Ph.D., Assistant Professor in Education and Cooperative Extension
Robert L. Bruce, Ph.D., Professor of Extension Education
Robert G. Calkins, Ph.D., Associate Professor of History of Art
Marvin A. Carlson, Ph.D., Associate Professor of Theatre Arts
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- oger Livesay, Ph.D., Professor of Mathematics
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- d C. Ludington, Ph.D., Associate Professor of
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- nd Chinese Literature
- icott McMillin, Ph.D., Associate Professor of English
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Professor of Education
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- Arnold Singer, Associate Professor of Art
- David A. Singer, Ph.D., Assistant Professor of Mathematics
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- Jack Squier, M.F.A., Professor of Art
- Stuart W. Stein, M.C.P., Professor of Urban Planning and
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- Shaler Stidham, Jr., Ph.D., Assistant Professor of
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- David Stillman, Ph.D., Assistant Professor of Linguistics
- Ronni L. Stillman, M.A., Lecturer in Women's Studies
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and Biological Sciences
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of Education
- Robert S. Summers, LL.B., Professor of Law
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Associate Professor of Natural Resources
- Phyllis Thompson, M.F.A., Assistant Professor of Art
- Raymond G. Thorpe, M.Chem.E., Associate Professor of
Chemical Engineering
- Lowell D. Uhler, Ph.D., Professor of Biology, Ecology and
Systematics
- Paul J. VanDemark, Ph.D., Professor of Microbiology
- Thomas Wan, Ph.D., Visiting Assistant Professor of
Sociology
- Abraham Wandersman, B.A., Lecturer in Psychology
- James E. West, Ph.D., Associate Professor of Mathematics

John Wilcox, Ed.D., Professor of Education; Director,
Cornell Institute for Career Education
L. Pearce Williams, Ph.D., John Stambough Professor of
History, Professor of History of Science
Byron Yaffe, LL.B., Assistant Professor of Industrial and
Labor Relations
Joo-Tae Yoon, M.A., Lecturer in Economics
Anthony D. York, M.Div., Lecturer in Semitic Languages and
Literatures
William D. Youngs, Ph.D., Assistant Professor, Fishery
Biology

Summer Guest Faculty

Clyde W. Bresee, Ph.D., Director of Guidance, Athens Area
Schools, Athens, Pennsylvania
Stefano Cusumano, Visiting Critic in Art from Cooper Union
Jack M. Dann, B.A., Visiting Free-Lance Writer

David Evans, Ph.D., Professor of Educational Psychology,
University of Exeter, Exeter, England
Doris Fields, M.S.W., Urban Affairs Director, Y.W.C.A. of
Rochester and Monroe County
Donald W. Goldsmith, Ph.D., Assistant Professor of
Astronomy, State University of New York at Stony Brook
Donald Kagan, Ph.D., Professor of Ancient History, Yale
University, New Haven, Connecticut
Margaret Karns, M.A., Instructor in Government,
Wells College, Aurora, New York
James Kurowski, M.D., Director of Disease Control,
Department of Health and Hospitals, Denver, Colorado
Philip Lewin, Ph.D., Director of Guidance, Ithaca City
Schools
Carol M. McFadden, M.A.T., Visiting Lecturer in
Neurobiology and Behavior
Nancy H. Ramage, Ph.D., Assistant Professor of Art History,
Ithaca College
David Schmeidler, Ph.D., Senior Lecturer, Tel-Aviv
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Application Instructions

ase complete both sides of the application form
ow; be sure to give all information requested.
l the application to the *Dean of Summer Session*,
Day Hall, Cornell University, Ithaca,
Y York 14850.

lications should be submitted at least ten days
r to registration. Applications will be accepted
o and including registration day, but registration
erial will not be mailed out unless the
lication is received at least ten days prior to
stration. Late applicants will pick up their
erial at registration. Priority for individual course
llment is established by the order in which
lications are received. For additional
rmation, see pp. 7-8.

ou are a United States citizen and do not have a
al Security Number, please apply for one
mediately, and be sure to bring it with you
n you come to register.

Course Program

se list the courses you wish to take in the space
ided on the application form below. The
ses must be selected from the regular sessions
is *Announcement*. To apply for admission
Special Program, see directions accompanying
program description.

Programs of more than four credit hours in the
three-week session, eight credit hours in the
six-week session, or ten credit hours in the eight-
week session must be approved by the dean of
the Summer Session.

Undergraduate applicants are urged to consult the
appropriate officials in their own colleges in
planning their course programs to ensure that the
credit they earn will be accepted toward their degree
programs. Students lacking necessary prerequisites
will be admitted to courses only by special
permission of the course instructor.

For Cornell Undergraduates Only

Applicants who are enrolled in, or have been
admitted to, Cornell University must have the
statement of approval, which appears on the
application form below, signed by the appropriate
University official (see p. 9 for the approved list).
This applies only to undergraduate degree
candidates and is not required of graduate students.

along perforations

Application for Admission Cornell University Summer Session 1973

3-Week Session
June 6-June 26

☐ 6-Week Session
June 27-August 10

☐ 8-Week Session
June 18-August 10

Female ☐

Male ☐

me first name middle
se check address to be used after May 15.

resent address _____
number and street

state

zip code

ome address _____
number and street

state

zip code

etry of citizenship _____

COMPLETE OTHER SIDE OF APPLICATION IN FULL

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Rcdd. _____

Sent _____

For office
use only

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Tear along perforations

Social Security Number _____

☐ I am enrolled in _____ as a candidate in good standing for
college or university
_____ degree.

☐ I am a high school graduate accepted for admission to _____

☐ I am not a full-time student.

school last attended _____ date _____

number of years of college completed _____ degree _____

present employer _____ position held _____

List your complete program indicating the session(s) for each course (3-wk., 6-wk., or 8-wk.), department abbreviation, course number, course title, credit hours, and meeting times.

Session	Dept. Abbrev.	Course No.	Title of Course	Credit Hours	Meeting Times
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REGISTRATION APPROVAL: FOR CORNELL UNDERGRADUATES ONLY

Signature of College Official

Title